HISTORICAL DIVER

The Official Publication of The Historical Diving Societies of Canada, Germany, Mexico, Russia and the U.S.A.

Volume 15 Issue 4 Number 53, Fall 2007

Bud Weiser
Commercial Diver

• *Diving Pioneers and Innovators* • *The History of Oilfield Diving* •
• The Museum for Underwater Activities, Slovenia •
• Australia's Porpoise Rebreather • Don Ross — A Kiwi Pioneer •
• SEALAB Accident — A Lesson Learned •
• Miller-Dunn Diving Hood Patent •

$15.00 U.S.

2008 HDS Conference and ADCI Western Chapter Annual Meeting

April 18 - 20, 2008
Monterey Maritime and History Museum
Monterey, California

Join the Historical Diving Society in the important diving port of Monterey, California, for a weekend of diving history and maritime culture. The conference will focus in part on the history of the divers of Cannery Row, the local abalone and sea urchin diving industry, and their links to commercial oil field diving and Japanese culture. The weekend event is held in conjunction with the Association of Diving Contractors Western Chapter meeting.

Friday April 18, 6 PM - 9 PM
Welcoming reception with the ADCI Western Chapter. (The location is to be announced.)

Saturday April 19, 9 AM - 4:30 PM
HDS 2008 Conference at Monterey Maritime Museum.

Speakers include:
Tom Kendrick presenting "Swimming with Sea Monsters: 22 Years as a California Sea Urchin Diver."

Nyle C. Monday presenting "Dragons Under the Sea: the FUKURYU and the Underwater Defense of Japan, 1945."

Chris Swann presenting "The Development of Commercial Helium Diving."

A.L. "Scrap" Lundy presenting "The Divers Who Made Cannery Row the Sardine Capital of the World."

See displays of historical diving equipment, our HDS booth, and more.

HDS 2008 Awards Banquet, 6 PM - 10.30 PM
Casa Munras Hotel, Andalucia Meeting Room.

Live auction for historical items including an original deep sea diving helmet. HDS Pioneer Award, HDS E.R. Cross Award, HDS Nick Icorn Diving Heritage Award presentations. Guest speaker TBA.

Sunday April 20, 10 AM
Visit Cannery Row and the Cannery Row Foundation Commercial Diving Monument.

Conference tickets $40. Banquet tickets $57. **Tickets available solely from HDS at 805-934-1660 or email at hds@hds.org.**
Both tickets are LIMITED. Tickets available solely from HDS office at 805-934-1660 or hds@hds.org.
The last HDS West Coast Conference sold out, so please book early.

Conference Hotel — Casa Munras
Tel: 800-222-2446 Fax: 831-375-1365 web: www.hotelcasamunras.com
Request ADC / HDS Conference rate of $169. Alternate hotels listed at www.hds.org.

Conference organizers: Nyle Monday, Sid Macken, Leslie Leaney and Fred Aichele.

All weekend events are open to the public. Complete details of this unique national gathering including exhibits, additional speakers, banquet guest speaker and full weekend program can be found at www.hds.org.

HISTORICAL DIVING SOCIETY U.S.A.

A PUBLIC BENEFIT NONPROFIT CORPORATION
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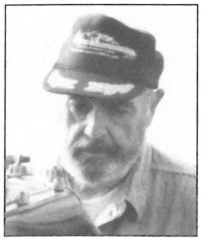
HISTORICAL DIVER

Volume 15, Issue 4 ISSN 1094-4516 Number 53, Fall 2007

FEATURES



On the Cover
Bud Weiser and Torrance Parker at the Los Angeles Maritime Museum, 2003.

ARTICLES

Editorial

This issue rounds out the 2007 year. We are slightly behind in our projected publishing date due to time spent with our Tarpon Springs Conference, the DEMA Show and the holidays. The Conference went extremely well and the Show seemed busier than predicted. We will report on these events in the next issue.

Christopher Swann's much anticipated book, *The History of Oilfield Diving* (see Torrance Parker's review starting on page 38), arrived in limited quantities at the DEMA Show. This heavy-weight book's title suggested a dry college text but, in fact, I found it an eminently readable, fast moving and technically satisfying exposé on the race to conquer the liquid barrier for lucrative oil contracts. It is high-seas combat with hundreds of millions of dollars at stake; battling the wildly treacherous North Sea by pirate-like corporate managers, risk-taking diving company entrepreneurs and free-lance commercial divers seeking their fortune. I couldn't turn the pages fast enough. I was amazed at the number of people who were spending millions of research dollars on mixed gas, deep diving physiology while others were just as willing to fake it in the grab for gold. And the money was there as frantic national and international interests drove the "Golden Age of Oil Exploration." This is not a book you will put down easily.

Bret Gilliam's new book, *Diving Pioneers and Innovators*, also arrived before the Show (see our book review beginning on page 30). Bret's book is a series of interviews with many of those crazy rascals that lived through Swann's narrative. It is filled with stories of our diving heritage from characters as colorful as the images on Bret's pages. And all have made significant achievements in mans quest for underwater adventure. This glossy coffee-table book can be laid to rest between readings as each chapter is self contained. Just pick it up and enjoy another insider's look into their association with the sea.

This issue of *Historical Diver* has a distinctly international feel to it. From Bud Weiser's commercial diving exploits around the world; we travel downunder, diving with home-built equipment in Australia and New Zealand and then off to visit a diving museum on the Adriatic Coast of Slovenia.

And speaking of commercial diving ... we sadly report the passing of Dan Wilson. Those of you who knew him will agree that this man was a major player in pioneering techniques for off-shore oil acquisition. I met Dan only once, and at the time, knew little of his adventures. Thankfully, at least three historians have published books touching on Hugh "Dan" Wilson's career. And, in the same light, we will miss the buccaneering spirit of the South Pacific's Reece Discombe. Let's hope that the mold these men were cast from has not been lost.

In this season of goodwill, my thanks go out to all who have contributed to making *Historical Diver* the great magazine that it is. You behind-the-scenes characters know who you are.

— Kent Rockwell, Editor

HISTORICAL DIVER MAGAZINE

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HISTORICAL DIVING SOCIETY MEXICO
HISTORICAL DIVING SOCIETY RUSSIA

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DISCLAIMER

Diving is a potentially hazardous practice and if practiced incorrectly, or with incomplete planning and procedures, can expose a person to considerable risks including serious injury or death. It requires specialized training, equipment and experience. HISTORICAL DIVER is not intended as a substitute for the above or for the diver to abandon common sense in pursuit of diving activities beyond his or her abilities. HISTORICAL DIVER is intended as a source of information on various aspects of diving, not as a substitute for proper training and experience. For training in diving, contact a national certification agency. The reader is advised that all the elements of hazard and risk associated with diving cannot be brought out within the scope of this text. The individuals, companies and organizations presented in HISTORICAL DIVER are not liable for damage or injury, including death, which may result from any diving activities, with respect to information contained herein.

2008
BOSTON SEA ROVERS

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The Cayman Islands, the destination that pioneered the sport of SCUBA diving, now stands at the forefront of nitrox and mixed gas diving with unmatched instruction and expertise, as well as new safe diving limits. Just a few reasons why, for all that diving is, was and always will be, the Cayman Islands remains the world's unquestioned leader. Call your travel professional or visit www.divecayman.ky

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HDS USA Welcomes New Advisory Board Member

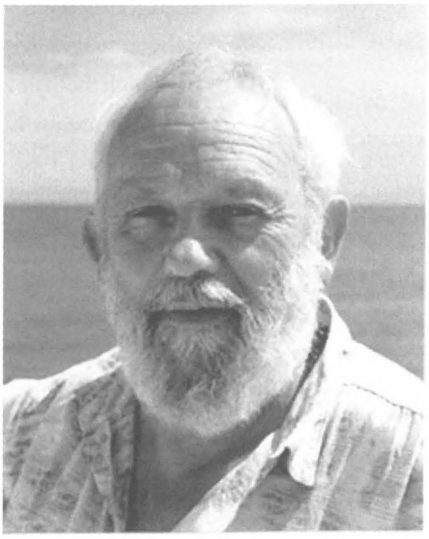
The Board of Directors is Pleased to Announce the Appointment of Daniel Mercier to the Society's Advisory Board

Daniel Mercier was born the May 31, 1931, in Clamart in the suburbs of Paris. In his youth he had an unrequited desire to navigate. During this period after, WW II, it was difficult to realize his dream. At the age 20, he left Paris for Switzerland, where he became interested in educating and animating youth, doing research on the different pedagogic educational methods.

In 1961, Mercier settled in Antibes and became interested in the sea, his boyhood dream. He started diving the same year and passed his first diving certifications in 1963. In 1966 he founded the "Spondyle Club," which grew into one of the largest French Diving Clubs. Mercier still presides over the club to this day. In 1967, he became the state instructor for diving and today he holds the 3rd state degree, the highest national level.

Mercier is President of the Cote D'Azur regional educational commission and National Instructor, and member of the National and International College. In 1973, he founded the National Association for Diving Instructors "Les Guides de la Mer," a professional syndicated association, of which he is Honorary-Founding President.

In 1974, with the "Spondyle Club" team, he founded the "World Festival of Underwater Images," the goal being to promote the underwater world, to stimulate new images and to make of this event a meeting place for everyone who feels "passionately" about the sea. Mercier is President and Organizer.



Daniel Mercier

In 1975, he was the President of the Cote D'Azur committee of the French Federation of Studies and Underwater Sports. In 1976, Mercier was National Vice President of this Federation, a position he held for four years. Between 1985-1992, he founded and organized the Festival of the Mountains and Images in Antibes, (taking the example of the Underwater Film Festival), an activity he attended with a great interest during his Swiss "period." In 1991, Mercier was stimulated to create a European organization bringing together professional diving instructors.

He agreed to preside over the organization and this is how the C.E.D.I.P was born (European Committee of Professional Diving Instructors). The administration services are in Antibes and the head office in Anvers. In 1992 Mercier Mercier was honored to with the Trident d'Or,' becoming a member of the International Academy of Science and Techniques Subaquatiques of Ustica and then receiving the Gold Medal for Youth and Sports.

In September of 1993, he received the "Tauchpionierpreis" that honors the diving pioneers in Germanic countries. This was presented to him in Gose, Austria. He is the second Frenchman to receive this prize; the first went to Commander Philippe Taillez.

In 1995, Mercier was elected "Man of the Year" in the diving domain by the Israeli magazine *YAM*. In 2001, h°e created the foundation Festival of World Underwater Images of which he is the superintendent.

In 2002, he was awarded the Honorary Medal of the National Federation of Volunteers of Joinvillias given by the Comity Provence-Cote d'Azur-Corse-Monaco and in 2003, the Knight of the Order of Maritime Merit.

In 2005, Mercier received the "The Historical Diving Society Hans Hass Diving to Adventure" award, from the Historical Diving Society, USA — the third to receive the prize. He is still the President of the World Festival of Image and Underwater and of the CEDIP.

Today Mercier, is preoccupied in finding solutions to enable the continuity of his different creations/foundations; in particular the World Underwater Film Festival and Underwater Images, which is a major event in the diving world. His slogan: Diving, the school of life.

In the Mail

Navy Mark V Breast Plate Knot

I was recently awarded a new DESCO Navy Mark V helmet for 20 years of service at Underwater Constructions Corporation. I would like to add a rope tied with the breast plate knot to the display but cannot find anyone who knows how to tie one. I contacted DESCO and they referred me to your organization. Can you tell me the name of the knot or tell me how to tie one? Any help would be appreciated.

Matthew Jackson
mjackson@uccdive.com

Congratulations on your award Matthew. Our Advisory Board member Bob Barth guided us to Ed Delanoy, Hyperbaric's Supervisor, Naval Diving & Salvage Training Center, who supplied the following answer:" The knot is called a "Carrick Bend" and a video of how to tie it can be found at: www.animatedknots.com/carrick/index.php

— Editor

Mark V Helmets Database

I would like to see more articles on Mark V and 5 bolt helmets used by the U.S. Navy. Also, how about maintaining a database for collector Mark V helmets. Anyone with miss-matched helmets may then be able to find the match to bonnet or breastplate.

Francis X. Smith II

Miller-Dunn Helmet Patent

I was intrigued by Dr Vorosmarti's letter and offer these observations. There are illustrations on pages 18 and 35 of *A Pictorial History of Diving*, published by Best Publishing, and also on the Diving Heritage website at www.divingheritage.com which show manufacturer's plates from both the Style 2 and Style 3 of the Miller-Dunn Divinhood. Both these plates show US patent numbers 1,195,793 and 1,595,908. The first of these 1,195,793 titled Diving-Hood was published on Aug 22, 1916 and the application filed on Feb 4, 1915, with William F Miller and William S Dunn as Inventors.

It describes and illustrates a simple diving helmet. No 1,595,908 titled "Diving Hood," was published on Aug, 10, 1926, but had only William F. Miller as inventor. It describes and illustrates a diving helmet with improved angles of vision for the diver by means of the angled face plates, which are protected against breakage and designed to be easily

replaced. I assume that these are the two patents that Dr Vorosmarti refers to.

I have some experience with patents and have done some online searching of various patent databases. I have not yet found any further patents by Miller or Dunn that look like the Style 3, although I did find a Danish patent (No. 22520, Inventors Miller & Dunn), equivalent to the first US patent 1,196,793 and it quotes the US filing date of Feb 4 1915.

It is possible that Miller & Dunn may have applied for a patent for the Style 3 hood, but it may have been disallowed by the Patent Office. Most patent offices require a patent to be new, useful, (and not to break the laws of nature) before they will grant it. They could thus disallow a patent application for being insufficiently novel, or for being obvious. It is also possible that a further patent application was not filed for the Style 3 because its design, with its reversion to the flat forward-facing faceplate, was covered by the existing patent 1,195,793. It is also possible that someone else with greater skill than I may have found the mystery patent already!

Richard Walsby
Richard.walsby@ntlworld.com

Thank you for the information Richard and a most timely email, too (see Dr. Vorosmarti's patent column in this issue featuring one of the patents you mention).

— Editor

Blind Diver Article

On behalf of the Cutting family, I wish to thank you for publishing the article by Dorothy Barstad about our father. The article was very well written and we are so happy that Dad is finally getting some recognition by others in diving. He was a wonderful and trusting person and was taken advantage of so many times by seeing people, it finally broke his heart.

You do have our permission to send the article to other publications that you deem appropriate.

Again, the Cutting family thanks you at HDM, Dorothy Barstad and Charlie Orr.

Harry Cutting
San Bernardino, Calif.

We were honored to feature your father and have received many positive comments on Dorothy's article.

—Editor

Fathomeering, An Amphibian's Tale

Thanks for the advance copy of your review of my book and email which printed OK from my HP laptop (*Historical Diver* #52, page 49). I must say I'm impressed, however, in the first line of the fifth paragraph I think you meant "profusely illustrated," but then I never understood the rules of grammar at school, except that an adjective is a describing word! I had to laugh at your thinking my writing old fashioned because my oldest boy said, "You know Dad, they don't write books like this any more!" Well, I simply write in the manner of my favorite authors (who are now all long dead come to think of it!).

Leslie did send me copies of my original Dive NZ article, reprinted in your *Historical Diver* #20, but I would love to receive the issues with the above review and your later comments (if favorable!). I like to think I was influenced by Beebe even though I lacked his powers of perception and description. I have no idea of how my writing differs from the present day style, but then almost all the books on my shelves have been gleaned from the dark recesses of second hand bookshops.

And no, I don't have my old 1948 Siebe air-scuba. I had to sell off everything to raise my fare to voyage back to Aberdeen late in 1954 to be with my terminally ill mother.

Ivor Howitt
New Zealand

Oh, how profound! Those pesky proofreaders making changes from the original text and me not proofing their proofing me! We do have a few magazine procedures to iron out, Ivor. We're happy you enjoyed our writing about your writing. We have your books in shipment to our HDS office now. Orders may be placed directly with HDS so readers should check our website or office for availability and pricing details.

— Editor

Zale Parry

I really enjoyed the interview with Zale Parry. She was about five years ahead of my time in the diving world and many of the names and incidents she related were a well known to the diving community. What a great refresher read of a fascinating time.

This remarkable interview is such a good example I hope it will persuade Dr. Lambertsen to agree to something like it for your publication. He knows so much about modern diving history that needs to be told. What a read that will be!

Steve Bullock
Alexandria, Va.

In the Mail

Those of us who started diving in the 1950s know that was the "golden age" of underwater exploration for the average man and every red-blooded male knew who Zale was. She is in contact with the HDS on a weekly basis and keeps us on the straight and narrow … as our advisory board members should. We have been working closely with Dr. Lambertsen and plan to feature his significant contributions to civilian and military scuba as well as saturation diving in up-coming issues of Historical Diver.

— Editor

Book Research Inquiry

I am doing some research on hardhat diving for a book that I have in mind. At the moment it is intended to be an adventure drama, and a major feature of the story is the raising of a sunken American commercial fishing ship. The story is based on a maritime song whose author has since died, but the gist of the matter is, I do not have a proper setting for the time period in which the story took place. I will continue researching, of course, but I wonder if you could give me some starting points so I can maintain accuracy on the diving and salvage technology, and perhaps even work out an estimated year in which to base this drama. I currently live outside of the USA, so I don't have access to diving literature other than through the Internet and email. I have looked a little at your links to back issues of *Historical Diver* magazine, but I am uncertain how much you charge for copies to be sent to me in Japan (my current home).

I realize that all of this is a tall order, and I apologize if you have just spit your coffee onto the screen in response to reading this. I do, however, appreciate any direction or source you can offer to help steer me into smooth sailing on this writing venture.

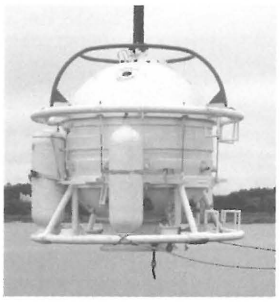
Glen Hill
hill@obihiro.ac.jp

Glen, you may contact the HDS office directly to enquire about back issues and shipping costs. Good luck with your adventures in writing. hds@hds.org & www.hds.org for back issue contents.

— Editor

In the News

OCTOBER 17, 2007: SUBJECT: *ELK RIVER STATION*



The USS *Elk River* (SEALAB Three) Personnel Transfer Capsule (PTC) now sits in 110' of water near the habitat *Aquarius*. She's bolted to the seabed via the seven-foot-tall tower with stud link chains attached from the cloverleaf on top to four pad-eyes anchored to the seafloor. De-watered, the *Elk River Station* will begin its life at the mouth of the Scott Carpenter Basin, not far from the Kamper and Koblick stations. The "dry" PTC will be used in conjunction with the *Aquarius* habitat programs.

Signed over to the Marine Resources Development Foundation (MRDF) in Key Largo for display at the MRDF park, it was one of two PTC's on USS *Elk River* (IX-501) that were used in the SEALAB Three operation Feb., 1969.

— Craig Cooper

SCUBA MUSEUM SURFACES IN LOVES PARK

Dan Johnson dove into the history of scuba diving and came back up with many nearly lost treasures. He has a 68-year-old "rebreather" scuba device developed by Rockford's own James Lockwood, and remnants of two century-old shipwrecks from Lake Michigan. He even has a two-man submarine used in the 1965 James Bond movie *Thunderball* (without the spear guns).

All those items and more can be seen at his new Lockwood Pioneer Scuba Diving Museum, 7307 N. Alpine Road, Loves Park, Ill.

"The key is to educate the general public about the evolution of diving, where we came from and how we need to save our waterways and quit polluting," said Johnson, owner of Loves Park Scuba & Snorkel next door.

The museum will be free to the public, and open whenever the scuba store is open. A grand opening will be scheduled in May, but visitors can come before then. The museum is named in honor of Jim Lockwood, a former Rockford resident who built scuba equipment here starting in the late 1930s. Lockwood founded Lockwood Oil Co. service stations in Rockford, but sold the company to pursue diving. He died in 2003 at age 92. Lockwood Park in northwest Rockford is named for his gifts to the Rockford Park District. Most of the cost of the museum is funded by the Lockwood estate, with Johnson paying the rest.

Lockwood developed his first scuba device - a "rebreather" that recovers exhaled oxygen and makes it suitable for reuse — five years before Jacques Cousteau and Émile Gagnan developed their more famous "aqualung" scuba system.

Lockwood was drafted during World War II and when he showed the U.S. Navy his designs, he was given a workshop to develop diving equipment strictly for military use. An original blueprint from August 9, 1942 was classified as secret at the time of the war and was signed by the designer Lockwood. These documents are on extended loan to the museum and available for public viewing.

"But Lockwood had even wider influence," said Kent Rockwell, editor of *Historical Diver* magazine, an international publication based in California. "With Max G. Nohl, Lockwood developed underwater housings for motion-picture cameras," said Rockwell, "and helped with the underwater filming of early *Tarzan* movies. He also consulted on the 1954 film *20,000 Leagues Under the Sea*."

Lockwood became friends with well-known diver Max G. Nohl, who set a depth record in 1937. Lockwood and Nohl worked on numerous projects, including exploring shipwrecks, Johnson said.

"Jim was one of our forefathers of diving," Johnson said. "He helped bring diving into the civilian world."

Johnson plans to have regular speakers and events at the museum. He'll also open it up for children's birthday parties and scout troops. The scuba store includes a pool where children can take their first scuba experience.

— Thomas V. Bona

Coming Events

January 29-31, 2008
Underwater Intervention 2008
New Orleans, La.
www.underwaterintervention.com

February (date TBA) 2008
Divers Day @ Aquarium of the Pacific
Long Beach, Calif.
www.aquariumofthepacific.org

March 7-9, 2008
Boston Sea Rovers Clinic
Boston, Mass.
www.bostonsearovers.com

March 11-15, 2008
American Academy of Underwater Sciences (AAUS) Symposium, hosted by Scripps Institution of Oceanography (SIO)
La Jolla, Calif.
Christian McDonald:
cmcdonald@ucsd.edu

March 28-30, 2008
Beneath The Sea
Secaucus, N.J.
www.beneaththesea.org

April 18-20, 2008
HDS 2008 Conference, including West Coast Chapter of ADCI Conference
Monterey, Calif.
www.hds.org

April 20-22, 2008
Ocean Fest
Fort Lauderdale, Fla.
www.oceanfest.com

May 21-22, 2008
The Scuba Show
Long Beach, Calif.
www.saintbrendan.com

October 22-25, 2008
DEMA 2008
Las Vegas, Nev.
www.demashow.com

USS *Squalus* Mark V Helium Helmets Update

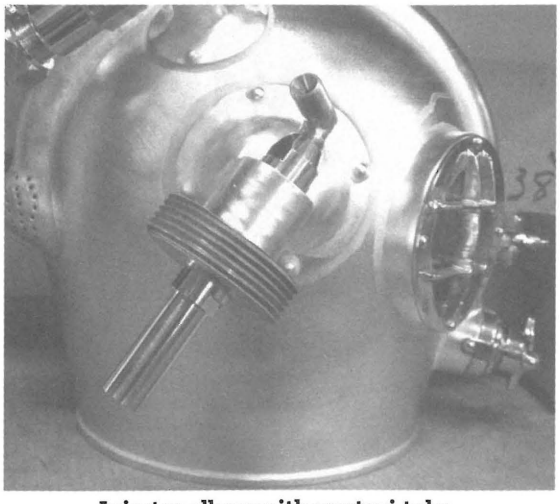
The HDS/DESCO Limited Edition Mk V Helium Helmets are progressing nicely in both production and sales (see *Historical Diver* magazines issue 50, page 6 and issue 51, inside back cover). As we go to press more than half of the 26 USS *Squalus* commemorative helmets offered are in their final stages of manufacturing. Completion date will be prior to September 13, 2009, the 70th Anniversary of the salvage of the submarine *Squalus* in 1939.

Sales have been brisk, to say the least, with deposits on more than 3/4 of the production run. If you are interested in one of these "once-in-a life-time opportunities," I would suggest calling Ric Koellner at DESCO and placing your order at your earliest convenience (414-272-2371 or diveq@execpc.com).

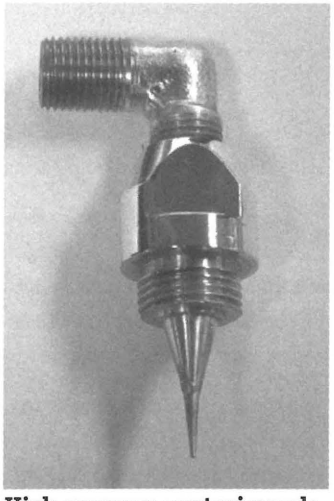
I have been studying the Dive Log of the USS *Falcon* (available from the HDS) and making notes on the experimental helium helmet's use during the *Squalus* salvage. Called the oxygen-helium outfit with recirculator this nomenclature was later abbreviated to He-0_2 with recirculator. The recirculator was the key ingredient and referred to the venturi tube system that circulated the suit's breathing mixture through the scrubber canister, recycling the gas and conserving the scarce helium mixture. Out of the 640 total dives made during the salvage some 222 were on He-0_2.

— Kent Rockwell

Rear view of MkV with canister.



Injector elbow with venturi tube.



High-pressure venturi nozzle.

Helmets of the Deep Available from HDS

Dear Members,

We have recently been in touch with Leon Lyons, the author of the second edition of *Helmets of the Deep*. Leon estimates that the book will now possibly contain 1,000 pages with a greatly expanded content. Several Society members have submitted photos of various rare helmets for inclusion.

The author's current estimated price of the book is between $430-$450 for the standard volume, plus shipping. The Society will not mark-up any books. They will only be sold at the author's retail price in US Dollars.

The Society is now accepting deposits to confirm orders. The required deposit to confirm your order is $150. Checks and M.O.'s should be payable to HDS and mailed to the address below. If you wish to pay by credit card the deposit is $153 (the $3 is to cover card process fees). You can pay by credit card by replying to this email or by calling the HDS office at 805-934-1660, M-F 9am - 1pm Pacific time.

Once the Society receives your deposit, you will receive an Order Confirmation Number. You will then be contacted when the book is available and the remaining balance is due.

Leon estimates availability in mid 2008. The current plan is for the author to visit the HDS office and sign all fully paid copies.

With each fully paid order the Society will include a complimentary copy of the American classic *Diving With & Without Armor*, by J.B. Green, originally published in 1859 and meticulously reprinted by Lee Selisky.

Further details on *Helmets of the Deep* can be found in the Society interview with the author in *Historical Diver* magazine issue 52, pages 36-37. We hope to have further updates on the Society web site currently under reconstruction.

— Best wishes, Leslie Leaney President

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Voices From The Deep

An Interview with Bud Weiser

Bud Weiser and Torrance Parker, Los Angeles Maritime Museum, 2003.

BY LESLIE G. JACOBS

L.G "Bud" Weiser was born in 1934 in Carlisle, Pennsylvania, in the Cumberland Valley and attended Dickinson College. He left the East Coast and headed to California in the 1950s, embarking on a diving career that spanned both abalone and marine construction, from Los Angeles Harbor to the Indian Ocean, Africa and South America.

We spent several hours talking to Bud at his home in Rancho Palos Verdes, California, and followed up with a visit to Torrance Parker's home a few miles away. Torrance and Bud have known each other and worked together on many jobs since the mid-1950s, and Torrance was able to provide additional information on their role in construction and abalone diving history.

What follows is a combination of the two sessions, assembled by topic and chronology wherever possible. We begin with the start of Bud's diving career — which happened almost by accident in the U.S. Army at Fort Eustis, Virginia.

Did you enlist?

Bud: No, I was drafted. But I volunteered for the diving program. I had some incentive to volunteer: I had quite a few delinquency reports in the company I was in, and at the time, if you transferred, the delinquency reports didn't follow you. What saved me was a battalion clerk and a company clerk who were sending these delinquency reports back and forth to each other. They told me they couldn't keep doing that forever. I also had a very decent company commander who called me in and told me that if I didn't straighten up my act, he was going to have to do something about it.

In what were you delinquent?

Bud: Being off-code, out of uniform, off limits — nothing serious. The MPs write it up and the Company Commander is supposed to address it. He called me in and told me I had seven delinquency reports and three are enough to send you to the stockade. He said, "Tell you what I'm going to do: I'm going to tear up five of these and I'm going to keep two. If I see one more report, you're going to the stockade." So, I pushed through my transfer to Diving School.

Was the Diving School something you had always wanted to do?

Bud: No, not really. I had talked to some working divers, but what I really wanted to do was sign up for Helicopter School. I qualified for it, but I needed something that was starting right away and the Diving School was. The folks at the Helicopter School said, "We'll let you in, just sign here." I said, "What's that?" They told me I'd have to sign up for two more years. I said, "Let me think that over," and I went over and signed up for the Diving School because they didn't ask me to sign up for any more time. I was in the Army Diving School in Ft. Eustis, Virginia, for seven months in 1954. When I got out, I only had 11 months left to do of my enlistment.

What kind of gear did they train you on?

Bud: The Mark V and DESCO's Jack Browne gear. This was in 1954. I never had to go over to Korea, like most of the Army divers at that time, because I got sent to Harbor Craft School instead. I heard that the fellow who ran the diving school Torrance instructed at before I got there was Chief Warrant Officer Mike Moran.

Torrance Parker: Mike Moran worked for Merritt-Chapman & Scott prior to his Army career. In World War II, M-C&S had 73 civilian divers working to salvage the SS Normandie. A lot of people think the U.S. Navy raised the Normandie. When the Normandie (ex USS Lafayette) capsized between Piers 88 and 90, the Navy set up a diving school on Pier 88, alongside her upturned bottom. Merritt-Chapman divers were working from the Pier 90 side so they could go in through the deck openings and passageways to seal off portholes and other work. They actually raised the ship — not the Navy.

What the Navy did do, they had a diving school on the Normandie, and that's where they trained divers during WWII. Not only Navy divers, but Army divers as well. I am not certain, but that might have been the first Army diving school. The Army was sending divers over to France with the Corps of Engineers during WWII. Later, during WWII the Army started its own diving school at Tybee Island in Georgia. That's the one that oil diving pioneer Charlie Isabel went through. Of course, he was already a diver before he enlisted in the Army but still he had to go through the school that was standard Army procedure, just the same as with me.

The next Army school was started when they moved to Ft. Eustis, I believe at the end of the war. That's the school that Chief Warrant Officer Mike Moran ran, with Buck Harvey, and that's the school I went through, and later worked at. Moran and Harvey had also started the school on Tybee Island. The original Eustis school was down in what I call "The Woods," on the outskirts of the base. We also trained tenders there. When Bud came into the school, they had disbanded that facility and built a new school, apparently a larger facility. The officers in charge were a Capt. Garvey White and CWO Buck Harvey. Bud went through that school.

Bud: Warrant Officer Terry Brennan was in charge of the diving section when I was there. He and his father were both divers in the Tidewater area. He showed us how to rig lighter and use ankle weights and galoshes; that was a big help because it was easy to slip wearing brass boots or lead shoes. We did many dives in the James River on reserve fleet ships after Hurricane Hazel scrambled them.

Bud, how did you know Torrance Parker?

Bud: I knew him by reputation, but he was discharged before I started diving school. When I got out of the Army I called Torrance.

Torrance: No, Bud, you never called me. We never talked on the phone… You knocked on my door one night looking for a job and it was Christmas Eve.

Bud: OK, we'll use your version.

Torrance: You never called me. I didn't know who you were when you showed up!

Bud, I heard that story — you were banging on his door on Christmas Eve and he invited you in to have dinner with the family.

Bud: Yes, I showed up at his house looking for work. And I stayed and had dinner with the family. Torrance couldn't put me to work right away. So, I found a spot on an abalone boat out of Newport Beach. We were selling abalone to the Monroe Brothers. It worked out that the boat got one sixth of the profit, one third for the tender and half for the diver — that's how we were paid out of what they processed. We worked "split diving" — two divers working a dead boat; I would dive in the morning, the other diver would tend me, and then in the afternoon we'd switch.

What kind of abalone were you finding?

Bud: Mostly pinks and greens. Off San Clemente Island, in a little cove inside of Pyramid Cove, we found a bed of greens that were so thick that they couldn't grow. We sorted through them for an hour to find one that was legal. The greens had to be seven and a quarter inches, and these were all smaller than that. We talked to the Fish and Game representative about it; we showed him some old ones that were just barely legal and told him that there were a lot there that were never going to be legal because they were all crammed in so tightly. So the Fish and Game guy said, "If you want to go in and pick the old ones, OK! I don't think they're greens, I think they're pinks." Pinks only had to be six inches. So, we sent in a couple loads. Well, the Fish and Game guy went on vacation and his replacement wrote us a ticket! They took all the abalone to pay the fine. I did find some yellow abs — Sorensens — in deep water off Santa Barbara Island — the crème de la crème.

Here's a picture of *The Viking*. That was Torrance's abalone boat. Torrance doesn't believe it, but I dove it out of San Clemente Island with a guy by the name of Harry Martin for the Monroe Brothers.

Torrance: I never lent it out to the Monroe Brothers, but I did lend it out to a guy who may have taken it upon himself to lend it out to the Monroe's.

Bud: The Monroe Brothers let Harry Martin and me dive it. The first diving I did after I got out of the Army was abalone diving. I think I hit every island in Southern California except San Nicholas.

I left Harrisburg, Pennsylvania, with five dollars, a 1950 Cadillac and ten gallons of gas in the tank. I got to Pittsburgh and answered an ad that said, "Earn big dollars and travel to California" selling magazines. When I got to California, I had about $50. Then I went down to see Torrance who told me I had to join the Union if I wanted work in underwater construction. I got my abalone permit and talked to Jimmy Maag in Newport Beach about a diving job.

Bud Weiser on dive barge *Eagle*, 1975.

Torrance: Jimmy Maag went through the Army diving school at the same time I did. Prior to being drafted, he'd been an abalone diver out here in California. Jimmy was diving abalone out of a small boat or a big skiff, without a tender. He was using swim gear — a mask and a hose. Everybody thought he was nuts, but he was making more money that way. Then, when he got out of the army, he established an abalone processing company in Newport Beach and became very successful. Jimmy Maag worked for the Monroe Brothers for quite a while to learn the fish processing business. He became very wealthy, bought a big house in La Jolla on the ocean bluff. I hired him as a tender after he hit some hard times and he worked for us in San Onofre. Then he went to Palm Springs and got interested in golf, started a golf shop. I lost track of him. He may be gone by now.

Bud: Torrance told me to talk to Jimmy Maag and then to Jimmy Ellis and then to the Monroe Brothers — a lot of guys were looking for work at that time — but the Monroes said they'd try me out.

Abalone season opened in March and closed in December I believe. It was 1956 when I went out on the Glory H, skippered by Jimmy Weist. Jimmy "The Weisel" Weist. He was quite a character. He was in the movie The Spirit of St. Louis. He was the one giving James Stewart the signal from the fishing boat. They were going to use the Glory H to check out all these "green" applicants (for abalone diving); they took me, Frenchie laRue, George "The Greek," John "The Navigator" Cunningham, and a few other fellows out from Newport Beach to San Clemente Island. The Glory H was a 58 to 60-footer with a fish hold on her. That's where 10 of us would-be divers were sleeping. The cook-tender was a fellow named Albacore Al, and he was famous in the abalone business up and down the coast of California, from Morro Bay to San Diego. He could make a great lobster salad out of sheepshead bass. We never had any trouble catching sheepshead because they would follow us around, trying to take a bite out of the abalone. So, we anchored the Glory H at the Wormhole up at Wilson's Cove.

Why did they call it "the Wormhole?"

Bud: Because the abalone were old and wormy.

Torrance: You couldn't see the worms in them until the processors got them on the Plexiglas tables. They'd shine a light through the abs from underneath. They'd trim the abalone into thin steaks, and you could see the little worms. I think it was Jimmy Maag who perfected that. They had a suction device kind of like a dentist would use in your mouth to suck the water out with a hose and a little piece of copper tubing for a punch. They'd punch out that little section of abalone steak that had the worm in it. The more holes they sucked out, the less that steak weighed. When they were paying by the pound, they could always tell you, "Well, it had a lot of worms." It didn't weight what you knew it should have weighed. There were a lot of ways a processor could cheat you and that was one. Most processors were honest, but sometimes they hired poor trimmers who cut too much meat off the abalone from around the foot. A trimmer who wasn't careful was trimming off good meat. After a hundred dozen or more, that would add up. It was always better when you got paid by the dozen, and let the processors worry about the poundage.

Bud: So, we were working in about 60 feet of water, off the Glory H, with one compressor and two 600-foot hoses, with two divers diving at one time. We were using old Jack Browne dresses with Phil Widolf masks, the one's that were made of brass.

Torrance: Not all abalone diving was done that way.

Bud: Oh, no. The real successful, long-term abalone divers, like John Athey, all had a good tender, a stable, operating live boat and a good hard hat. And they worked hard. Some of them were very good mechanics, because you had to keep the equipment going and maintain all of the gear. They had to be resourceful. When the weather was bad, the ones they called "lucky" were working on their gear. The "unlucky" ones were drinking at the bar! John Athey's tender and boat operator was a guy called The Crying Chinaman. He was one of the most sought-after tenders because when the sun came up, the Chinaman was out crying, "Let's get to work! Let's make some money! Come on get your butt in the water!" He'd cry all day. Everybody who wanted to make some money wanted the Crying Chinaman because he was a good live-boat operator.

So getting back to diving off the *Glory H*, we had two divers out with Widolf masks and DESCO/Jack Browne dresses. While I was down, the compressor died. They tried to get it restarted, so the other diver, George the Greek, and I …

Torrance: George the Greek was from Tarpon Springs. Dan Wilson told me he was a sponge diver at one time.

Bud: When the air started getting low, I wasn't getting enough air. I started heading back. We were using very large sacks about six feet long — monsters. It was an ignorant way of working. The sack was pretty heavy and I wasn't getting any air at all. I hooked my belt snap to the ab sack, dumped my belt, sack and mask, and got up to the ladder pretty quick. This is called a bail-out and it was taught with the swim gear we used in the Army. Good training paid off. But George was still under. They were trying to pull him in, but with all the kelp, he was like an anchor, they couldn't move him. When they finally got him up on the ladder, he was gray and his tongue was out. He was a stocky guy, and he still had the weight belt on. He still had his hand locked around his abalone sack! We finally got him up on deck and he looked gone. In the Army I'd learned a new kind of artificial respiration technique called the Hip-Lift-Shoulder-Press. I did that for a couple minutes when all of a sudden, he spewed out a bunch of water and started breathing.

Torrance: Pinks weighed around 33 pounds per dozen. That's a lot of weight he was hanging onto.

When did you start using heavy gear in abalone diving?

Bud: The first time I got to use heavy gear was with Dan Wilson. He was getting his helium gas diving going. Bob Long was his tender and Bob needed someone to partner with. I dived off Dan's boat. It was a nice boat, with a straight six Ford diesel. That was probably about 1961 or so.

Torrance: Remember, abalone was fill-in work for a lot of divers. You didn't necessarily do it continuously. Divers like Bud would use abalone as a way to subsist between construction diving jobs. Prior to the 1960s, Bud was already doing construction diving and a lot of great work too, I might add.

Bud: One of the fellows I worked with at San Clemente was Chuck Sites. Chuck and I and his brother Don worked abalone from an anchored boat. Don tended both of us. You could do pretty well that way, working dead boat when the weather was good.

When did you get into marine construction?

Bud: About 1957, I believe. Torrance Parker and Art Broman got me into the union. In those days, you had to have two people to sponsor you. Before my diving work came along, I worked marine construction on the Santa Monica Pier as a pile butt.

What was the first job you worked for Torrance Parker?

Bud: Torrance was building a ship launching ways in San Diego and he hired me to be a tender for Bill Thompson, a co-diver of his. Later, Torrance recommended me to Ray Savard and Ray got me on a job for Collins Construction Company who were extending and overhauling the marine loading lines at El Segundo for the Standard Oil Company. Other divers along on the same job were Mike Sandello, Lou Lentz, and Otis "Big Smitty" Smith.

Torrance: Sammy Collins brought his Seamaster 500-ton two-drum winch out here from the Gulf to pull the Hyperion sludge line out to sea for a distance of seven miles. It was a big job, and quite an engineering feat. While there, he contracted other work such as Standard Oil's marine loading line project.

Bud: Ray was another ex-Army diver guy. It was Ray Savard who invited me to come to work for Sammy Collins. So I left my Cadillac here with a buddy and we got into Ray's Mercury and drove to Port Lavaca, Texas. Right after that, I went to Cameron, Louisiana, to work on a trenching barge installing some marine gathering lines. This was right after Hurricane Audrey. Cameron Parrish, before the hurricane, had a population of 550, and after the hurricane, there were only 50 survivors. One of the survivors was the skipper on our "quarter boat," as they called it. It was an ex-shrimper, they'd installed some bunks, and that's what we lived on while we worked. We were trenching pipelines, and installing risers in the Gulf.

When did you start going overseas for Sammy Collins?

Bud: It was around 1958; they sent me down to Venezuela. That was when we put in a 30" concrete coated steel waterline and pulled it from Isla de Margarita to Cumana — about the same distance as from Los Angeles to Catalina Island — to pump fresh water to the island. We also put in an 8" line to another little island called Lobos. For years, there hadn't been a drop of rain on that island, and when we got the launch way set up for the pipeline, it rained for a week. That launch way was nothing but one great big mud pit. They had built a reservoir for water years before, but it wasn't set up to use because they hadn't put in any infrastructure. So they still had to haul in water on barges for everybody on the island.

Sammy Collins was quite a character, wasn't he?

(Note: S. V. "Sammy" Collins was a Texas entrepreneur who also founded the Marine Diamond Corporation. Collins mobilized a series of specialized air-lift barges to recover diamonds offshore on the West Coast of Africa. That operation was eventually taken over by DeBeers.)

Bud: No doubt. There was an old joke about Sammy rescuing an Admiral from downing. When the

Admiral thanked Sammy for saving his life, he said, "I'd really appreciate it if you didn't tell my men that I can't swim." And Sammy said, "That's all right, I won't tell 'em, you can't swim if you don't tell my men I can't walk on water!"

Torrance: In the '50s and '60s, Collins was one of the top pipe-liners in the world. He was a risk-taker, an adventurer, and a smart guy.

Bud: When I worked for him down in Venezuela, we were getting our subsistence, but we weren't getting our paychecks — our diving pay. Ray Savard and me and the other divers went to talk to him about getting our pay. Sammy was having a big cash flow problem. He went into a half-hour spiel and at the end said, "Everybody go have a drink on me!" About an hour after he left, someone said, "Wait a minute, he didn't tell us anything about our money." So we scratched our heads and went back to work. We still didn't find out when we were gonna get our money. If he'd had it, he would have given it to us. We did get paid, eventually.

Torrance: Sammy Collins made and lost many millions as an international pipeline constructor.

Bud: Sammy flew us first class, in a DC-7, out of New Orleans for the job in Venezuela. It was cheaper to fly first class because each passenger was allowed 60 kilos. In coach, you were only allowed 30 kilos, and our dive gear put us over. Anyway, we stopped in Havana to refuel and we also stocked up on rum. From there we went on to Venezuela.

So you had a fun flight?

Bud: Well, it was fluid. Those DC-7s were my favorite way to travel. By the time we got off the runway, I was asleep. The drone of the engines is very soothing.

Can you talk about the more dangerous jobs you have done?

Bud: There was a blowout on an oil rig down in the Gulf of Mexico. This was after a hurricane, in 1959. It was a Pemex job for Pauly Pan American. They were using a 3-legged riser platform with a conductor casing in the center in about 60-feet of water, and setting the Christmas Tree on top of the platform. The Christmas Tree is a series of control valves set up to control the flow of oil from the wellhead. The hurricane took it down and the well started leaking. There was a massive oil slick — the currents were running in a steady direction and it spread out for as far as I could see. So, they asked if I could shut it in. We anchored up current of it and drifted down fairly close to it. I didn't have any heavy gear with me, but Dick Evans, who had his own diving company down in the Gulf, had left some gear, which was nothing but an old WWII Mark V gas mask, a cartridge belt with chunks of steel for weights, and an oxygen hose. I dropped into the water but I had to come right back up because the noise from the escaping gas was unbelievable. It was like being right next to a jet engine. It was painful! The crew had some duct seal — electrician's putty — and I put that in my ears and dropped straight down. When I got down on the bottom, I could home in on where the noise was coming from. When I got within about 50 feet, I could see where the gas was coming out, with a valve just below the leak. I turned the valve and shut it in. When I was doing that job that is probably the most scared I'd ever been. The ear pain, noise and the unknown gave a massive adrenalin jolt. I can still remember the brassy taste in my mouth.

You also did work for Sammy Collins in Malaysia.

Bud: Sammy Collins was working with Williams Brothers in 1960. We put in a loading buoy called an SPM and pipeline out to a single point mooring for the oil tankers. We were preparing the bottom. They welded together a bunch of 8" pipe, made a big H out of it; we towed it out, went out and attached the copper cable to the H for cathodic protection and sunk it. We were there for about a year preparing the pipeline. They had a decent camp for us; we slept under mosquito netting and we had to take Atrabine for malaria. The weather wasn't bad because the trade winds kept the temperature down.

When you were in South Africa, how did you get the idea to start an abalone business?

Bud: My first job in South Africa was installing an effluent line for a titanium plant at a place called Amanzimtoti, near Durban. That's Zulu country. We did some of the work on that from a DUKW — those amphibious trucks the military used in World War II. I worked with a diver named Greenshields and he asked me what I did before I came to South Africa. I told him about the abalone diving I'd done in California. He said, "We call it 'perlamoen' here, there's lots of it down in the Cape." So the two of us drove to the Cape and on the way down, we stopped at various places to check it out. Sure enough, there was plenty of abalone. At the time, South Africans were taking the abalone, canning it and sending it to the Orient. In 1960, South African abalone cost 30 cents apiece! The first load I dove myself. The fishing areas in South Africa were near Hermanus, north of Houck's Bay, on the Indian Ocean. At the time, the divers were working both abalone and lobster, only they called it South African crayfish. Some of them would get 2,000 crayfish a night. The abalone haul was equally huge. In California abalone diving, we always talked about "dozens" and a super-good abalone diver was called "a hundred dozen diver." That meant you were something special. The South African divers talked in thousands; the record over 7,000 — in one day! This was in shallow water, twenty to thirty feet. Packed beds, clear water, short, palm like kelp and agar. I don't remember any sea urchins.

How did you plan to export them?

Bud: I steaked them and packed them, put them in 5-pound packs. I was going to get the lock on Las Vegas with the South African abalone. I had two partners, John Church, and Peter Dodds. One of them was already in the abalone business with a canning factory and a fish processing plant. I hired native South Africans on an hourly piecework basis. The first load, I did the diving. I went out on a big dory; wide-gunneled, 14-16-foot, and deep. You could put about 2500 abalone in that dory. It was live-boating with oars. We used a Double-Speedy Compressor; they had reed valves and a rubber diaphragm. Clean air, no oil, and it had a little surge tank. We used a garden hose and gum-rubber dry suits, with cuffs on your ankles and wrists. The water was cold; you're down at the edge of the Cape and the water temperature is pretty much like Northern California.

The first day I landed in Capetown, the wind was blowing about 60 miles an hour. As far as I was concerned, that was a hurricane. On the Cape, they consider that a breezy day. The wind is coming out of the South; the wind kicks up where the Atlantic and the Indian Ocean come together below the cape. It's called the Cape of Storms, as well as the Cape of Good Hope. From Capetown to Walvis Bay is the Skeleton Coast; it's been said that you can stand on one wreck and look at the next one.

Anyway, we had a problem shipping the abalone to the states — the refrigeration system failed, so that was the end of that!

What was the job you did in Turkey?

Bud: That was a pipeline for NATO that was classified.

You still can't talk about it?

Bud: What I can say is, we worked off an old Navy salvage vessel — the oldest one I've ever seen — in the Bosporus. It was a neat job; instead of using trenching machines, we pulled a great big plow and we plowed the ditch and then pulled the pipe behind the plow. It worked out well. That was Gene Johnson's idea and we worked on it for seven to eight months. We had very nice accommodations, a four-bedroom house, very close to the jobsite on the Bosporus. But during winter, the rain came and there was a flood, 18 inches of water flooded down the street. The force of the water was so intense that it dislodged cobblestones that had been there for 1,000 years. So, we had to go stay at the Hilton!

What are the most challenging ocean conditions you've worked in?

Bud: I went to Alaska in 1965, in the wintertime. We had a job on a gathering line in Cooke's Inlet; the tides really boil there. Here's a scary story: I was working with a guy named Don Borden; they sent him down first and he went out and got himself hung up. Then I came down, I had a clamp to make up and I made up my clamp; In Alaska, you have short tides and long tides; you can only work on the tide changes. About 35 minutes work time is as long as you get on the short tide. The tenders there were very good at reading the water. If you don't have those tenders helping you, you can't do it. I got back and the tide started running. They said Borden had to come back in before I went out; they told me to wait by the opening until he got back. I waited and in moments, the tide started running higher. Finally, they told me Borden was hung up and couldn't get back. I got a hold of his hose and found out where it was hung up and unhooked it. The tide was running so hard, I barely managed to get back to the structure and then I had to pull him back.

What do you like best about diving as a career?

Bud: It didn't get boring. Most of the time it suited me because my attention span is a couple of years. The longest I worked any place was here in the L.A. Harbor with Torrance Parker.

We're looking at the photo of Bud and Torrance Parker at the Badger Bridge job in 1997 in Wilmington, California.

Bud: That was my last diving job. A lot of the work was in 70' of water. We had two recompression chambers and worked about a year a on it, Monday through Friday, plus weekends. My first major job and my last were with Torrance Parker. The first one was on a missile recovery at San Clemente Island. When were we at San Clemente, on the missile job, '59?

Torrance: Late 1959. I had just recently been hit and I was still semi-paralyzed from the waist down. I still couldn't step up onto a curb or go down a ramp.

Bud: The U.S. Defense Department was testing ASROCs (Air to Surface missiles) and wanted to recover them. Torrance had recently been bent real bad at Hyperion in 220 feet of water, but he had the contract to recover the missiles. They were already over there and set up and Torrance had Charlie Lindquist, Art Broman, Ray Inan, Ralph Purnell, Pete Brumis and Gus Clements with him. I flew out to San Clemente Island on a DC-3 at midnight. My job was to go down and re-attach a chain choker around the missile so they could retrieve it. Divers were running out of time as the missile had penetrated the bottom vertically to its tail fins. I don't remember anything after I hit bottom at about 230 feet. Torrance said I let out the

most horrendous scream he ever heard and scared the daylights out of everybody on deck.

Torrance: I was working the phones, and when Bud didn't tell me he was on bottom I asked him if he was on the bottom yet. In a "far off" and prolonged voice he answered, "I … am … going … to … find … the … missile." Hearing that, I hollered to Ralph Purnell, his tender, to start him up. Ralph said, "I can't, he's fouled! Right after that he let out a horrible long-lasting scream like a guy being drawn and quartered. I thought, has he been squeezed into his helmet? Then dead silence. I called down to him on the phone, "Hello Bud, are you O.K.? — Hello Bud! — Hello Bud!" No answer. Total silence!

Ray Inan, a Navy master diver recently discharged, was hanging off at his first water stop after finishing his time on the bottom. Because of the emergency, I sent Ray down Bud's hose to see what the situation was. When Ray reached Bud, he said, "Holy S - - -! He's all tangled up in the choke wire and chain." Looking into Bud's helmet with a flashlight he reported, "He is either dead or unconscious." Meanwhile, Chuck Lindquist — son of the well-known construction diver Charles Lindquist — was on his way down to relieve Ray. When Chuck finally got Bud clear, and started up with him, we still didn't know if he was dead or not. When they reached 60 feet Bud came to and asked, "Where am I?" To this day, those are some of the best words I have ever heard. Remember, all this was happening in the middle of a dark night, 50 to 70 miles at sea in 230 feet of water. In those days, all our dives were on straight air. We soaked him in the water till mid morning. When he came out, he was shivering and very cold, but bends-free. Since those many years ago, Bud has performed many exceptional diving jobs for Parker Diving.

Bud: I had narc'd out — perhaps CO_2 buildup too. But in spite of everything, I didn't get bent. You know, for a while a rumor was going around about me was that I'd get bent in a bathtub.

Tell me about the first time you got bent.

Bud: The first time was working for Sammy Collins in the Gulf of Mexico at Grand Isle. That was in late 1957 or early 1958. There was a bad storm coming up and we needed to get a couple clamps on a riser before the storm hit. Otherwise, it would turn into a salvage job. I pushed it a little bit and after I surfaced, I had pain in my leg, and shoulder. We didn't have any chamber nearby. I was at 110 feet for too long, maybe 20 minutes over what I should have been. Because of the storm coming in, they wanted to get out of the area. So, my decompression time in the water was cut short because of having to get out before the storm hit. My boss, Gene Johnson — he was the number 3 man in Sammy Collins' organization and a top-flight guy — dropped me down to about 90 feet and I got some relief. So I came slowly up to 30 feet. Then I came up to 20 feet and did a little time there, but I was getting beat up so bad because the storm was hitting; the waves were over 20 foot. I was practically out of the water one minute and submerged the next. In order to get any decompression at all, I had to keep real heavy. I was riding the T-bar and got all black and blue from getting slammed around. I told Gene I would have rather had the bends. In the meantime, Gene had called the Coast Guard and they came out and got me off the barge and flew me into New Orleans. There was not a single chamber in New Orleans in 1958. The closest one they could take me to was the Air Force chamber at Apalachicola, Florida.

The worst hit I ever got was right out here in Redondo Beach, constructing the cooling water lines for an electrical generating power plant. I got a head hit. Driving home, I started getting a headache and tunnel-vision, and then I got pains all over. My next-door neighbor at the time was commander of a minesweeper down at the Navy Base and he drove me down to Shop 72 at the Terminal Island Long Beach Naval Base where civil service workers operated a chamber. The Navy diving doctor was examining me, shoving needles in me, testing this and that and I couldn't feel a thing. I told him, "I think I can walk into that chamber now, if you don't want to carry me. Let's finish this inside." If I hadn't gotten into that chamber, I'd have been done for.

Down in San Diego, another fortuitous thing happened: Kenny Knott got a job for me in San Diego on the Hyperion in 1960. This was the first time they used the horse for laying pipe in the ocean. He said grab your dress and get down there. I'd just come back from overseas and didn't have a dress, so I called a friend in Morro Bay — Joe Gianini had one. I drove up, bought a dress, drove down to San Diego, out on the barge, and ended up last in the rotation, being the last guy; I made a dip at night. The depth was 200 feet. I got the joint made up and then I passed out on the bottom. This was the first day that they'd used the horse. Del Thomason was inside an observation chamber attached to the horse and he yelled, "The diver just blew up upside down, heading for the surface!" I don't remember any of it. So they ended up putting me in a diving bell that was used independent of the horse, and that was a good paying diving job as I still got depth premium pay.

Torrance: Bud's experience in the bell, which technically wasn't a bell because it wasn't open at the bottom, served him well and he was able to get the job in Africa because of it. He really knew how to maneuver that thing. He even removed excess bedding gravel covering the discharge ports on the San Diego Outfall with it.

When and where did you meet your wife, Wynie and what is the correct way to pronounce her name?

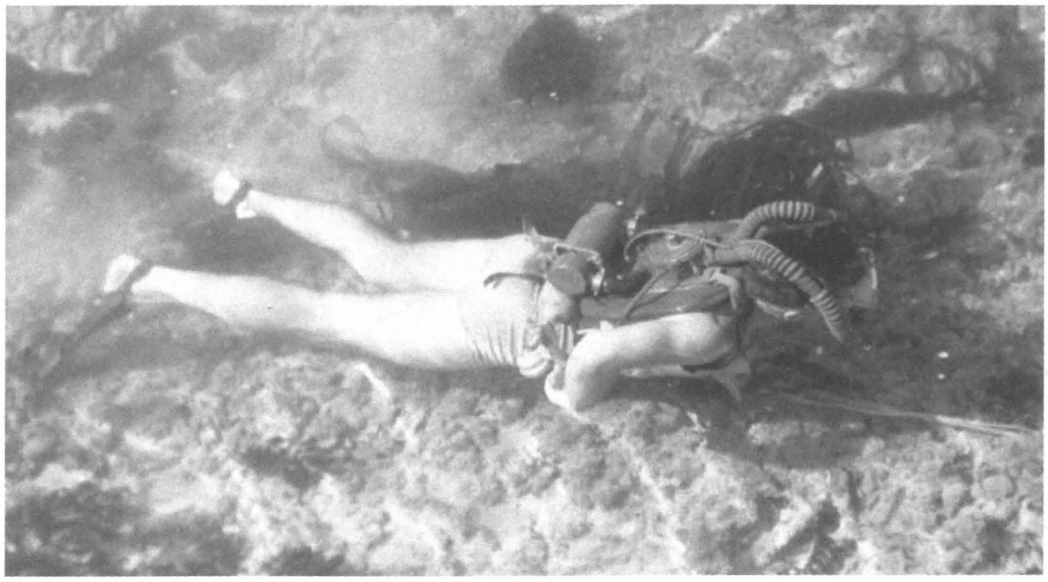
Bud: It's pronounced "Vane-y" — like "rainy." It's a Dutch Afrikaans name. The first Europeans to settle the Cape were the Dutch. Later on, a number of French Huguenots and Walloons came and settled. Most of the European Afrikaners were trying to escape religious persecution. Most were Protestant. A good percentage of the Afrikaners belonged to the Dutch Reform Church, which was Calvinist. This was in the 1600's. Her family had been there for longer than records were being kept.

I met her on my third trip to South Africa, in 1965. I made so many trips there, I've lost track. We got married in South Africa at Pinetown. It's about 30 miles from Durban. Wynie is actually from the Transvaal, a town called Springs, about 30 miles from Johannesburg. I was working on the Durban outfall when I met her. The vice president of the company was at the Durban City Hall with the mayor. It was a tall building and the mayor's office was on the top floor. Well, we'd just set a charge on one of the reefs to get the pipeline through. When the explosion hit, the ashtrays and everything bounced off the desk. City Hall was about 5 miles from where we set the charge. The VP played it off well; he just picked up the ashtrays and put them back and said, "Well, that shot went well!"

I've had way over ten divers' share of great good luck in my time. More than anybody could expect.

The publication of this article is made possible in part by Mystic Knights of the Sea, proud sponsor of *Historical Diver* Magazine.

Ted Eldred's Porpoise Oxygen Rebreathing Units



Foreword

"Early life as a 13 year old, living on a Peninsula with only one mile dividing the wild ocean from Victoria's huge Port Phillip Bay, on the southern coastline of Australia, the lure of the sea was ever present. The Bay was a lovely playground, but it was the wild, unpredictable ocean which offered the greatest attraction.

On the rare days when the sea calmed and the currents subsided, to explore the deep gutters, underwater caves and kelp-beds, gave me immense pleasure, but it wasn't until fins, masks and snorkels became available, that I could take advantage of these rare events. The shoreline was all rock, rock shelves covered at full tide, while at low tide exposing pools and gutters which were the only means of getting in and out of the water, a beautiful, wild, turbulent area completely devoid of surface craft.

I became an ardent spear fisherman, the experience from which later provided the foundation for equipment design, it taught how to enter and exit the water, to use the heavy swells, to use the kelp when caught in a current and above all to conserve energy, avoid injury and fight like hell to survive. The wish to be able to employ a free swimming diving unit, to explore the deepest depths and stay longer, had to remain only a wish until my engineering skills permitted me to commence designing and building such apparatus.

Progress came to a halt during the war years, but permitted me to undertake a comprehensive study of respiratory physiology pertaining to diving.

My first oxygen rebreather was built in 1946, followed during the next few years by improved models 2 and 3. During this period I was able to fully explore the limitations of both diver and equipment, coming to the conclusion that a near death situation, when respiration became uncontrollable, it was helpful to be breathing oxygen!"

Ted Eldred
22nd August 2005

BY DES WILLIAMS, EDITED BY DR. BILL TAYLOR WITH FOREWORD BY THE LATE TED ELDRED

This article first appeared in *Classic Diver*, the official magazine of the HDS SEAP
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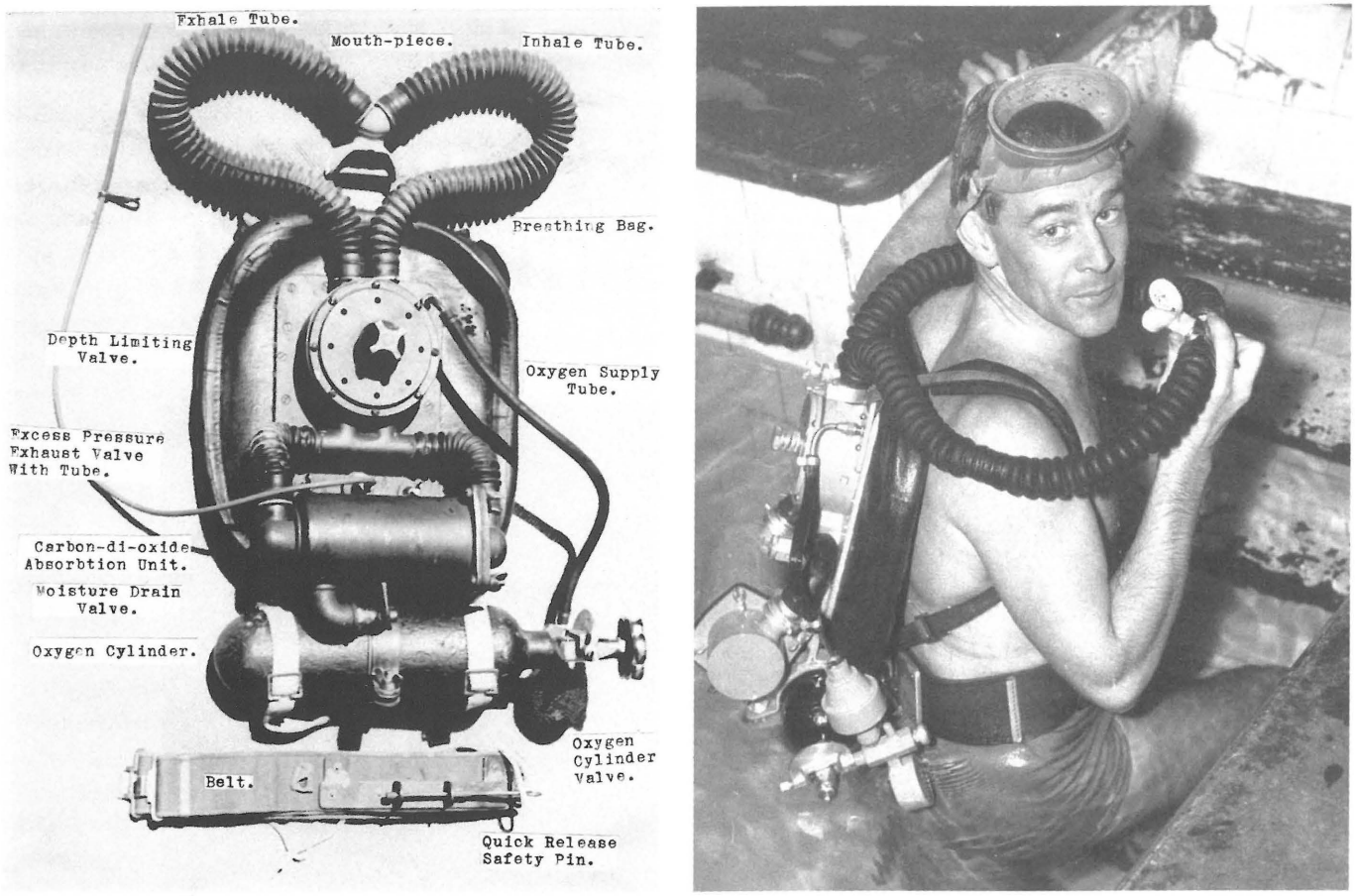


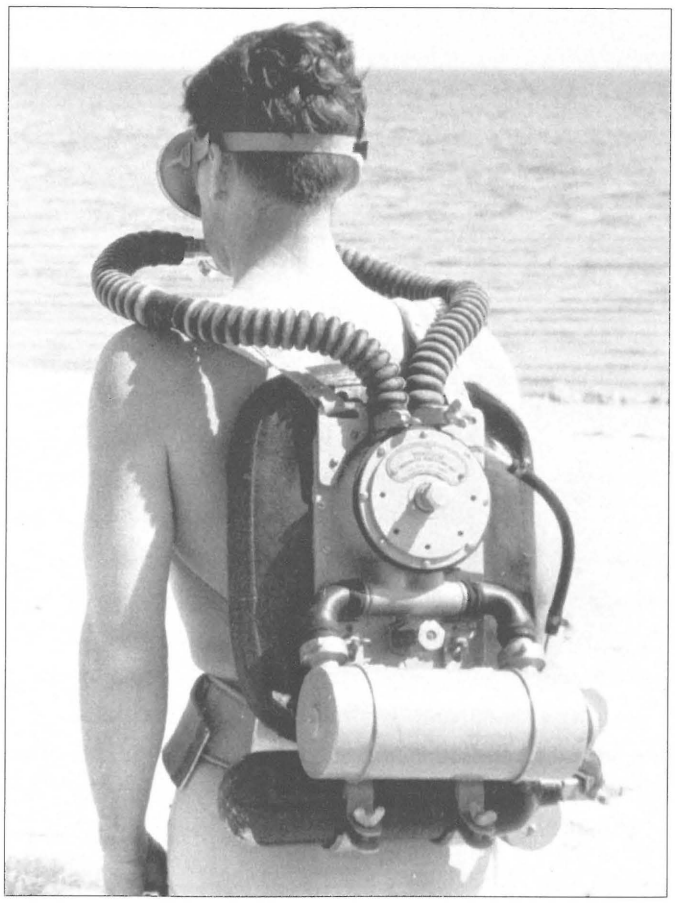
(Left) Back view of the MK 1 model Porpoise rebreather with it features labeled. Photo © W and G Taylor. (right) Bill Taylor in Melbourne City Baths, during MK 3 trials. Note the cylinder pressure reduction valve and contents gauge. Photo © W and G Taylor

Past issues of *Historical Diver* have carried reports on Ted Eldred's development of Australia's PORPOISE single-hose scuba system, in the very early 1950's. What is largely unknown, is that before the PORPOISE Air-Scuba the name PORPOISE was applied to an Oxygen Circuit Rebreather, another of Ted Eldred's creations. Until a few months ago, your author had only seen one photograph of this rare, non-production apparatus, supplied by Ivor Howitt, of New Zealand. Ivor had dived with Ted in 1953, at the tiny Victorian coastal town of Apollo Bay. Two of these PORPOISE oxygen units were depicted in the photo of the trio of divers Ted, Ivor and the late Bill Young, on the beach after their dive. All three men are now considered pioneers of Australian recreational diving.

Early in 2005, during preparations for a Ted Eldred Rally weekend, diving historian Jeff Maynard suggested I contact Dr. Bill Taylor in Melbourne for his story on the early diving days he shared with Eldred — in the late 1940s. Yet another Australian diving legend had surfaced and Bill very kindly consented to address our Ted Eldred Rally, held at the historic Melbourne City Baths in May of 2005, where the first recreational scuba training classes were held on the 10th August, 1953. Bill made a wonderful presentation, which he illustrated with many contemporary photographs of both the PORPOISE air scuba and its predecessor the PORPOISE oxygen circuit re-breather. Together, Bill and Ted had dived with these units during what was Ted's most active and creative period of developing underwater breathing apparatus.

In 1953, Bill's brother Geoff, a very capable amateur photographer, recorded many of the variations of diving equipment Ted and Bill shared during the developmental stages of both PORPOISE units. You can probably imagine this reporter's surprise, when Bill produced his photo album containing many magnificent large format photographs of both the PORPOISE oxygen and air scubas. My thanks go to Bill for allowing me to reproduce and share some of these historic contemporary photos with HD readers.

Bill Taylor met Ted Eldred shortly after World War II, while ice skating. Ted played ice hockey and Bill was a figure skater. After leaving school, Bill had joined the RAAF and flew Kittyhawk fighters with 76 Squadron in Borneo, New Guinea and the Philippines, during WW II. Following the war, he began studies at medical school. During their ice skating days, a firm friendship was forged which very quickly extended into time spent together diving, while Ted was developing his oxygen circuit scuba. They spent a lot of time



(Left) MK 3 model showing the insulated canister. The label on the canister reads "PORPOISE Underwater Breathing Unit." (Right) Bill Taylor displays the MK 3 oxygen unit. Note excess bag pressure relief tube and push botton mouthpiece seal. Photo © W and G Taylor.

off the beautiful beaches of the Mornington Peninsula, south of Melbourne, wearing only swimming trunks and football jumpers to protect them from the cold. Bill recalls that his interest in diving was further enhanced at the time, by the Hans Hass publications. Referring to several large black and white photographs, Bill detailed the manufacture, use and improvements Ted made through three models of the PORPOISE oxygen units in the late 1940's and early 1950s.

Most oxygen re-breathers in recreational use during that era were War surplus "Salvus" apparatus. Ted could see the advantage of improving such systems by making the breathing gas travel in a circuit, therefore more efficiently utilizing the soda lime absorbent and avoiding saturated "dead spots" in the chemical reservoir and the consequential steady and progressive increase in system dead space. His first challenge was production of the breathing bags, which were very difficult to produce. They had to be hand made from canvas, then dipped in rubber and vulcanized. The breathing tubes were salvaged from war surplus gas masks obtained from army disposal stores. Longer hoses on the MK 2 and 3 units were achieved by joining two lengths together, to make them long enough to reach the diver comfortably.

Breathing hoses on the MK 1 model were fitted with simple perforated disc valves, but in the later models, these were replaced by more efficient mitre* valves, oval-shaped rubber flaps mounted obliquely across the tubes. By mounting them very close to the mouthpiece, "dead-space" was kept to a minimum. Ted explained to me, that the mitre valves were 50% more efficient, as they produced a laminar air flow and did not impede the gas, unlike the mushroom valves which created a turbulent air flow. On the MK 1 model, breathing hose ends were simply pushed onto the fittings on the breathing bag, while the later MK 2 and 3 models employed much safer clamp attachments. The hoses connected to the soda lime canister were also only pushed onto the fittings in the MK 1 unit, while the MK 2 and 3 units had a safer screw-on fitting, similar to a garden hose/tap fittings, as used on early Siebe Gorman regulators.

The mouthpieces on all units were fashioned from metal and dipped in latex, although they did not present an anatomical fit! The MK 2 and 3 models were improved with a push/pull valve on the mouthpiece to close off the aperture, thus preventing the entry of water into the system if the diver removed the mouthpiece while in the water.

The oxygen supply cylinder was hung from the breathing bag by webbing and an Army surplus belt, fitted with a quick-release pin, similar to a door hinge fitting, allowed the whole unit to be ditched in an emergency situation, after the breathing-bag unit straps were let go.

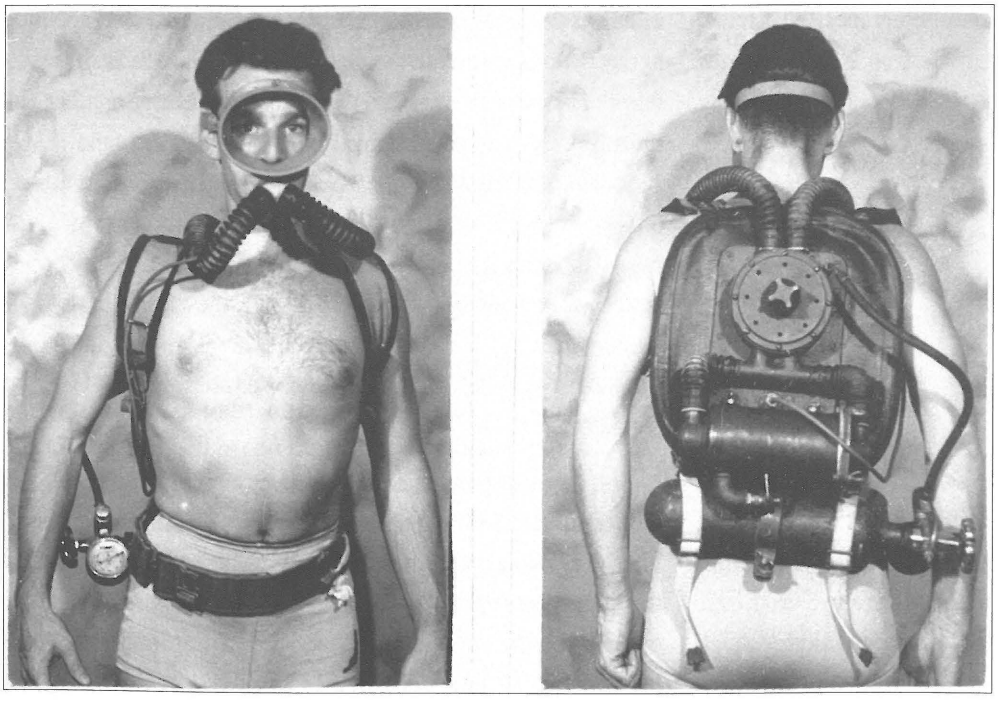
Bill explained that oxygen from the cylinder was bled into the system very carefully indeed on the MK 1, as there was no pressure reduction valve, so the gas was admitted under direct pressure! A cylinder contents gauge was fitted, but as it was mounted on the neck of the cylinder, it was very difficult for the diver to read it. A cylinder pressure reducing, constant flow valve became a feature of the MK 2 and 3 units.

A very interesting and innovative safety feature of the PORPOISE oxygen units was a depth limiting valve, which Ted Eldred had invented to warn the diver as the maximum safe diving depth for oxygen approached. The system was simple, two soft rubber tubes, which were part of the breathing circuit, passed through the body of the unit between two opposing blunt blades, one fixed to the valve body and the other fixed to a flexible diaphragm, which was acted upon by the ambient water pressure and adjusted by a spring, to select the depth at which it operated. At the selected depth, the flexible "knife edge," approximated to its fixed fellow blade, squeezed the soft rubber breathing tubes and placed a definite resistance to breathing circuit. The diver could not help but notice this warning. The device could be adjusted or pre-set by turning a knob located in the centre of the disc on the back of the unit. It was usually set to restrict gas flow at a depth of 27 feet, thus keeping the diver above the safe limit for breathing oxygen.

All units were fitted with a gas pressure-relief valve on the breathing bag, to avoid it over expanding on ascent. Again, this was a simple device, consisting of a length of bath-plug chain internally mounted to the back of the bag and across to the pressure relief valve. On ascent, as the bag expanded to the maximum length of the chain, it opened the relief valve and escaping gas traveled along a thin tube secured to the outside of one of the breathing hoses, to bubble out in full view of the diver. This way expanding/exiting gas could be monitored, by the diver.

The soda lime canister underwent several improvements from the MK 1 to MK 3 models, as Ted recognized the problems of condensation build up inside it. Bill recalls the soda lime canister developing terrific heat during a dive. Even though it was submerged in cold seawater, it was still very hot to the touch. As a result, condensation formed within the canister, which on the MK 1 unit, was drained off after the dive through a small gas cock fitting. The MK 2 and MK 3 units were fitted with doubled walled canisters along the lines of a vacuum flask to insulate them from the cold seawater and reduce condensation formation. Additionally, the ends of the canister were shaped like unspillable inkwells so what condensation did form could be isolated within the end chambers, thus limiting mixing with the soda lime.

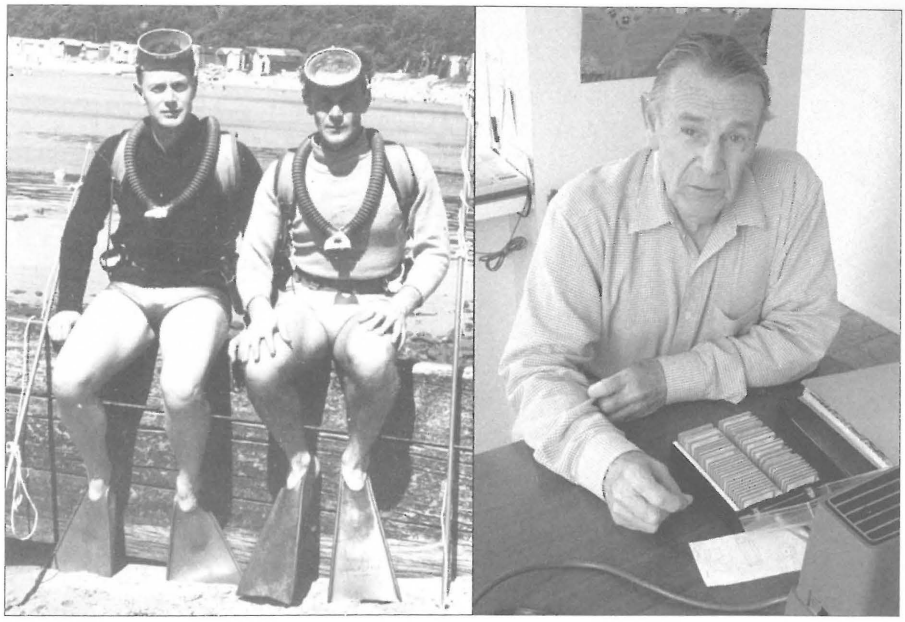
This improvement appeared on the MK 2 model, which had four wing nuts securing the removable end, while the MK 3 model had a simpler single nut attachment making it much easier to handle when replenishing the soda lime. All units were beautifully built, as Ted was very skillful indeed.



The MK 3 oxygen unit carried a "PORPOISE" brand nameplate. None of these oxygen units ever went into full production, as Ted could see that the recreational diving future was in air scuba units. To overcome the depth limitations and dangers associated with breathing oxygen underwater, he began working on his "PORPOISE" air-scuba. Unfortunately, none of Ted's oxygen circuit units have survived the passage of time, so Dr. Bill Taylor's photographs are indeed a very precious record of our diving heritage here, downunder.

The term "mitre valve" is one Dr. Bill Taylor coined and I guess it is probably not in general use today. The best way to describe it is to imagine an elliptically shaped "flap" of rubber, mounted at an angle within a round tube.

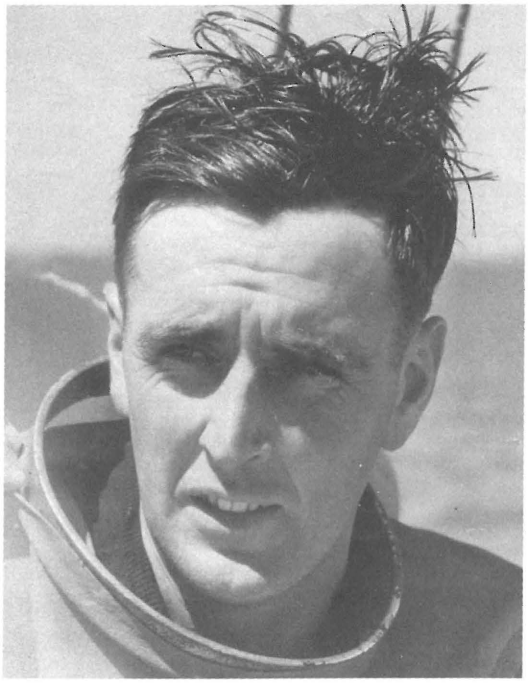
Obviously, the ellipse would have to be mounted at an angle to seal as a one-way valve within the round tube, so this is where the "mitre" comes from. Bill specifically highlighted this arrangement because the successor to this type of one-way mitre valve was the better known mushroom valve, which is a round valve within a round tube. Ted maintained that the air flow was less restricted by turbulence with the mite arrangement.



(Left) Ted Eldred, left, and Bill Taylor during the late 1940s preparing for a dive in Port Phillip Bay, Victoria, using Ted's oxygen units. Photo © W and G Taylor. (Right) Dr. Bill Taylor at home, 2005, with his Porpoise slide collection. Photo © Des Williams.

Des Williams wishes to thank Dr Bill Taylor for providing the information, editing and the beautiful photographs for this report. Also, he takes this opportunity to remember Ted Eldred, who wrote the 'Foreword' to this article only four days before he passed away. He was always very willing to be involved.

Don Ross — A Kiwi Pioneer



BY KEITH GORDON

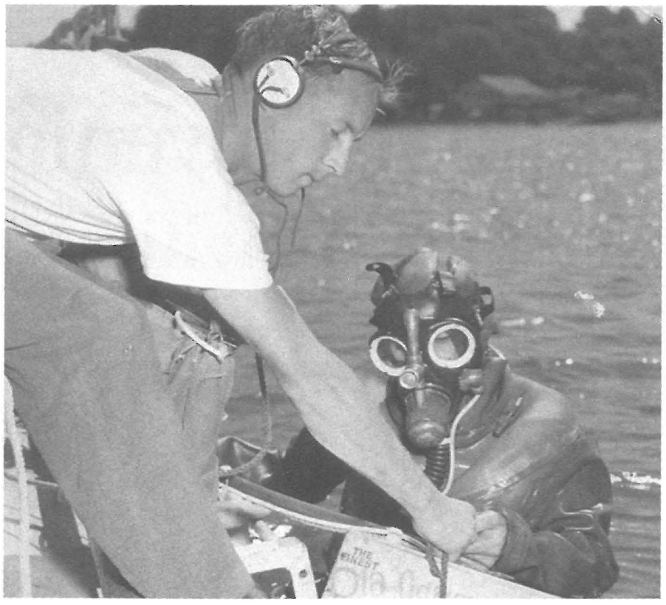
A faded copy of *Pix* magazine dated December, 1950, has an illustrated feature titled "Amateur Diver — Young New Zealander makes his own diving suit does harbour salvaging jobs from his 20-foot yacht." The article is a repeat of an original story that featured in an Auckland newspaper in 1947, and tells the story of 27-year-old Don Ross and his early underwater ventures around Auckland.

Ever since he was 16, when he used a garden hose and an improvised helmet, Don had been experimenting with diving gear. Having survived his car pump supplied, garden hose helmet dives to 15 feet using hand held weights for short periods of three minutes. Don next put weights on a pair of football boots, got a long length of rubber tubing, and rigged up a pressure tank alongside the car pump. With this set-up he could remain down for five minutes. His first dive suit was made from a jungle oilskin camouflage suit made waterproof with cement and rubber patches. The suit required so much air, there was little left for the diver. He found a larger pressure tank to which he fitted a pressure gauge. Don then acquired a wartime frogman's suit, which he later gave to Les Subritzky, and developed a helmet from an old army gas mask. He still used the old air pressure supply unit but mainly breathed from cylinders fastened to his chest and back. With this system Don could remain submerged at 35 feet for an hour. The tiny yacht he used for salvage jobs would become somewhat crowded when a dive was under way, with a dive attendant, pump operator and his diving hose occupying the small deck space.

Don was amazed at the abandoned articles he discovered on the bottom, a potential small fortune in those days, which he set about salvaging. He became popular amongst the boating fraternity recovering gear they had dropped overboard; sunken mooring buoys, outboard motors, anchors and watches amongst other items. In one anchorage, a favourite for yachties that Don described as "glass lined," he recovered a large number of beer bottles, which he then sold for a nice little profit. On another dive he recovered a full case of whiskey dropped by some unfortunate yachtsman.

In those early years he had little local competition for such treasures from the deep. He sold the small yacht and bought a launch in 1948 from which he continued his diving activities while improving his dive equipment. He continued using surface supplied equipment and never used scuba. Don recalls being called upon to do such jobs as searching for lost tooling in near zero visibility in the cooling pond of a brewery. Probably the closest go he had underwater was in a large public swimming pool.

He was testing modifications to his breathing gear when Martin Southward, his pump attendant, started chatting up the admiring girls who were attracted to the poolside activities. Martin soon became distracted by the female audience and ceased pumping.



Don Ross recovers a case of whisky with the diving mask he made from an old army gas mask. Photos © Kieth Gordon.

Down below Don, clad in his lead-soled boots, soon became aware his diminishing air supply and frantically sucked as he began to suffocate. He managed to climb back up his line and burst through the surface startling the assembled admirers. Now aged 84 and living in Whitianga, Don still meets up with Martin, his old pump attendant, and together they reminisce about those diving days of 60-years before.

A New Diving Museum in Slovenia
The Museum for Underwater Activities

Nestled in the centre of Europe, bordered by Italy and Austria on the North, Croatia on the South and Hungary on the East, Slovenia has everything: beautiful scenery, lakes, mountains, caves, skiing, a short but beautiful Adriatic coastline (47 kms), friendly hospitable people, and good food and wine. What more can you ask for? There's even a museum of diving history, The Museum for Underwater Activities.

Situated in the beautiful Adriatic resort of Piran, the museum is the result of a lot of hard work by Slovenian Zarko Sajic and his team

BY PHIL THURTLE

of volunteer helpers and is not to be missed if you visit the country. It could not be more perfectly situated, just walk out of the entrance, across the street and you are on the edge of the picturesque harbor of Piran. You cannot fail to spot the museum from the outside with its five large windows each with the word museum in a different language at the top and a large colored diving print beneath.

On a recent visit, my wife Jane and I were given a warm welcome by museum manager, Doris Delgiusto. She is a history student from Portoroz and manages to fit the museum opening with her studies at university. I was immediately impressed with the three well stocked rooms of exhibits.

Upon entering the museum you will see five mannequins dressed in classic diving equipment from manufacturers like Siebe Gorman, Galeazzi, Draeger and Russia. Behind the last mannequin, and pride of place in a glass case, is a Franz Cloth backpack as used around 1900 in the Austro Hungarian Navy. There are numerous wall displays depicting the history of diving, each explained in English, Italian and Slovene. The first set of display panels gives a brief history of diving, then they go on to cover the history of diving in the former Austro-Hungarian Empire and its surrounding area followed by panels bringing diving history up to date. Subjects covered include companies, projects, salvages, individuals and even diving accidents. There is even a display about cave diving and a mention of the help given in the early days by the British Cave Diving Group. There are two examples of twin diving pumps. One in its wooden case manufactured by Siebe Gorman, and the second, removed from its case, is a rare Galeazzi. A third pump is located by the entrance; it is a nice working example of a Draeger rocking action pump. Inside the five large windows, that can be viewed from outside as well, are five impressively large lithographs of diving scenes with a stained glass effect from the outside light. Each window has a single diving helmet sitting on a cleverly designed display pedestal. Other objects of diving history such as knives, torches, and telephones are also displayed around this room in glass cabinets, again with explanations in three languages.

The Museum for Underwater Activities

From left to right: Ranko Razpet,Maurizio Ruzzier, Mario Bernardi (partly hidden), Emil Urdih, Valter Ziza, Phil Thurtle, Zarko Sajic and Elizej Debernardi.

Between the two large rooms is a smaller space containing a fully dressed standard diver. The effect makes you feel like you are standing on the sea bed, while above, on a large platform, are two sailors in period uniforms manning a diving pump. The entrance to this room is flanked by two more mannequins, one dressed in a Russian submarine escape suit while the other is wearing a Russian re-breather set as worn by their special forces. There is a space for a further mannequin that will be a land soldier wearing a Yugoslavian tank escape set.

The final room concentrates on submarines and some very impressive home made scuba

equipment on loan by Marijan Richter, a marine biologist who we had the pleasure of meeting. He was pioneering scuba in Slovenia at the same time that Hans Hass was in Germany. Proudly displayed are some early Yugoslavian sports diving equipment like a small hand operated air pump and home made examples of masks, fins and camera housings. There is a continuous slide show displayed from a ceiling mounted projector onto a huge screen. Display cases exhibit classic scuba equipment like regulators, computers and depth gauges.

There are two mannequins dressed in naval officer's uniforms originally owned by two famous Slovenian submariners. While we were walking around the museum, we spoke to Milan Rajcevic, one of the original team members. He said that when Zarko mentioned that they should open a diving museum in Piran, he thought it would never happen but Zarko had the drive and vision to see the job through. It's a real credit to all of them. We met another member of Zarko's original group, Emil Urdih, who hasn't missed a diving demonstration yet.

Not long after we arrived in the museum, Zarko's team of volunteers turned up and started carrying equipment across the road to the edge of the harbor. After introductions were made to the team, I was given a standard dive in the harbor of Piran. I'm used to diving in murky docks here in the UK but when I looked down I could see the ladder dive all the way to the bottom, around 12 feet. Kitted up and ready to go, I had a wonderful dive. I could clearly see wildlife and the underside of the moored boats I was diving under. The constant gurgle of the bubbles was occasionally broken by Elizej Debernardi saying, "Are you OK Mr Phil?" over the telephone. After surfacing, weights and helmet removed, a large beer was pushed into my hand — like I said the Slovinians are very friendly and hospitable! Two more were to dive after me, Maurizio Ruzzier and local aquarium manager and CMAS diving instructor Valter Ziza, then the equipment was washed and put away, and we finished up in the bar next to the museum where we talked for some time — their English is very good.

Piran has so much to offer the visitor as well. Its architecture is influenced by Venice and there's a maritime museum with wonderful ships models and figure heads. There's a small aquarium and a dive

school for scuba. In the adjacent town of Portoroz are more bars and restaurants. The Marina Portoroz, where beautiful yachts are moored, is now the base for the successful Americas Cup sailor Russell Couttis from New Zealand. A visit to the ancient salt pans is recommended with a two hour tour. Some of the pans are still used today; extracting salt from the sea.

Our time in Slovenia was all too short, we had a wonderful time thanks to Zarko, his wife Helena and family, and all his working equipment team. We cannot thank them enough for the hospitality they showed and I know that it is the Slovenian's friendly nature that will bring us back for a longer stay.

For more information:
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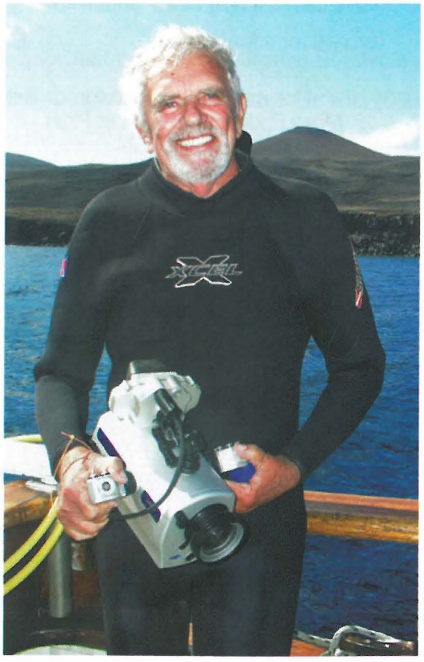
Visit: www.muzejpodvodnihdejavnosti.si

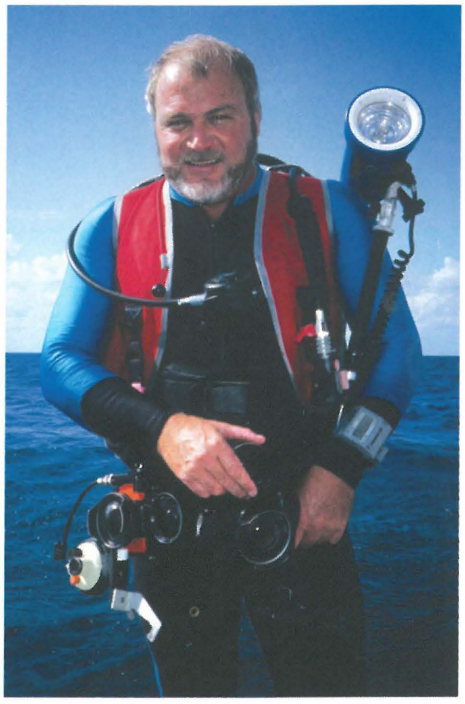
Photos, Pages 28-29: Museum diving displays.

Diving Pioneers & Innovators: A Series of In-Depth Interviews

By Brett Gilliam
With contributions by Fred Garth, Eric Hanauer, Lina Hitchcock, Douglas David Seifert, Michel Gilbert & Danielle Alary



Chuck Nicklin



Brett Gilliam

Howard and Michele Hall

"It is diving history told by the makers not the historians."

The author of this book co-founded *Fathoms*, one of the leading American diving magazines. The print and content standards Brett Gilliam set for that magazine have transposed to his magnificently produced book which records the history of some of diving's most creative and adventurous individuals.

The content is composed of face-to-face interviews with a stellar group of first and second generation divers who are pioneers in their fields. As the title states, some are also innovators who have developed small-scale ideas into multi national companies. Those backyard innovators helped bring about advancements in the equipment that we use today, such as Oceanic's HUD mask.

The interview list includes someone for everyone: Zale Parry, Stan Waterman, Bev Moran, Chuck Nicklin, Ron & Valerie Taylor, Peter Benchley, Dick Bonin. Wes Skiles, Bob Ballard, Mike DeGury, Michele Hall, Paul

Humann, John Chatterton, Greg MacGillivray, Bob Hollis, Al Giddings, Ernie Brooks, Howard Hall, and Bret Gilliam.

Most names will need no introduction to professionals in the recreational and technical diving communities. There are those with "brand names" in the diving industry as well as those from underwater imagery, while others, such as Peter Benchley and Bob Ballard, enjoy recognition from the broader general public.

The tone of the book is immediately set by the dedication page which recognizes "those eternal personalities" Dick Anderson, Paul Tzimoulis, Peter Gimbel, Ron Church, Sheck Exley, Mike Kevorkian, Frank Scalli, E. R. Cross, Bill Meistrell, John Cronin, Rob Palmer, Jack McKenney, Bill Turbervile, Cliff Simoneau, Larry Smith and Dr. Bob Dill. To reinforce the author's commitment to the historical aspects of the book, the HDS is graciously given a full page to present its purpose and mission. And we are certainly grateful to be included in a publication of this quality.

From the historical perspective, there is some real early treasure in the characters drawn together here. Waterman was already in the sea in 1934 and many others like Parry, Bonin, Brooks, Nicklin and Morgan began in the late 1940s early 1950s. Their early world was one of spear fishing and word-of-mouth scuba training. They were driven by their love of the sea, and they each stayed their heart's course and have lived a life connected to the sea. Numerous other early sea lovers also tried to make a career out their passion for diving. Then, as now, it proved to be a difficult thing to do. Those that were able to convert the intoxication of this new adventure into a meaningful career became the pioneers of the sport. However, scant attention was given to the historical relevance of what was being invented, discovered, and photographed or filmed. Few participants thought what they were doing would qualify for the designation of "historic." But some of it was and those involved, and still vertical, tell some of those stories here.

Through the book's pages you will get to know a very select group whose work in the underwater realm has elevated them to diving's MVP status. By granting practically unlimited editorial space to each, the interviews have captured not only the history of these careers but also the essence of the subject's character. Each interview provides a personal link in the chain of diving history that connects us all to the birth of the sport, and records some of the milestones they created along the way.

The ground-breaking underwater IMAX adventures of the Halls, deGruy and MacGillivray provide a modern day contrast to the historic toils of Giddings, Waterman, and Nicklin They, along with their departed colleagues Boren and McKenney, set the American standards for underwater cinematography. MacGillivray's Hollywood experiences offer diving action from encounters with sharks to encounters with Richard Zanack and Stanley Kubrick. There are other encounters with influential non-divers sprinkled throughout the book. The breadth of experience recorded by the interviewees in the pages goes far beyond the content of the average diving book, and the interviewers and editors are to be congratulated in helping these full stories be told.

"What do you call a thousand lawyers at the bottom of the sea? ... An awfully good start!" introduces the fascinating career of Paul Humann. Michele Hall scores a note for history when she is asked, "If we had a Diving Mount Rushmore what four persons should be carved into that cliff face?" Her first choice was Hans Hass. John Chatterton relates the triumphs and tragedies of his wreck diving adventures as he awaits Australian film director Peter Weir to turn them into a major movie.

The late Peter Benchley is ushered onto the page with arguably the most recognizable opening sentence in modern-day sea fiction:

John Chatterton

Mike deGruy

Paul Hunam

"The great fish moved silently through the night water, propelled by short sweeps of its crescent tail" The line is easy to read, but was not easy to write. Under Gilliam's adept guidance Benchley provides the Hollywood back-story to a print and celluloid icon—although most dive store owners of the late 1970s would call it something much, much, different.

Valerie Taylor and friend.

However, it is not the purpose of this review to detail something from everyone involved, but rather to provide a glimpse into the wealth of historical detail provided. The subjects open up many personal doors for the first time in print. This is their story in their own words, and not what your buddy might have heard third hand at the local club meeting. The divers interviewed here illuminate some of their historic paths that include discoveries on their personal journey. Theirs has been a unique experience and this book gives these special characters a chance to share some of their adventures. It is one of those books that could be placed in a time capsule that would be opened a century from now. It is diving history told by the participants rather than later historians.

Perhaps the most appealing element of this book is that it is easy to imagine that you are actually sitting opposite the divers as they tell their story. For me it felt like I could have been relaxing on the back of a dive boat and watching the sun set listening to someone who has had a measurable influence on the overall culture of diving. Very rare company, indeed.

2007 First Edition. Hard bound 8" x 11 1/2", with dust jacket, 489 pages with color and black and white photos. $60, plus $11 p&p domestic shipping. Calif. residents add 7.75% sales tax. For overseas rates, contact HDS office at: hds@hds.org.

HISTORICAL DIVING SOCIETY
U.S.A.

Books

The summer saw the launch of the annual HDS Raffle for the DESCO USN Mark V helmet that was drawn for at DEMA in Orlando on November 3. In addition to the raffle and Conference details, this year's flyer included book pre-publication notices for *The History of Oilfield Diving* and *Helmets of the Deep.* An advance copy of Chris Swann's *The History of Oilfield Diving* arrived at the office prior to this issue going to press and it is indeed a very impressive and expansive work.

A few copies were shipped to the Conference and were made available from the Society. A review by Torrance Parker appears elsewhere in this issue. At the HDS Conference, Leon Lyons presented an up date on his progress with the second edition of *Helmets of the Deep*. Another book being released at DEMA was Jeffrey Gallant's 2008 *Divers Almanac* and Yearbook, which has an expanded section on diving history that was reviewed by HDS members Nick Icorn, Nyle Monday, Peter Jackson, Sid Macken, Leslie Leaney and Ed Cargile. This group worked on a tight deadline under the leadership of Sid Macken.

We did receive a copy of the book by press time and we expect that there will be some comments and corrections as the Society works to refine the content for future issues. Other organizations involved in the publication and whose logos are featured on the cover along with the Society are DAN and IANTD.

The last two issues of this magazine featured interviews with Bev Morgan and Zale Parry conducted by member Brett Gilliam. These were taken from Brett's new book *Diving Pioneers and Innovators: A Series of In - Depth Interviews.* The office received an advance copy in early October and a review of the book is also contained in this issue. The publication mirrors the standards set by *Fathoms* magazine which Brett co-founded, and records the history of some of recreational diving's pioneers, photographers, and film makers. We had copies available at the Conference and DEMA and it will be available from the Society.

Underwater Magazine

In the early days of the Society, co-founder Skip Dunham developed a relationship between HDS and the Association of Diving Contractors. This led to an arrangement whereby Society members based in the USA would receive complimentary issues of ADC's *Underwater* Magazine. Until recently, this benefit was not fully promoted. As the ties between our non-profits strengthen, the Society continues to display at the ADCI *Underwater* Intervention show in New Orleans and the ADCI Western Chapter is again joining the HDS' 2008 Conference in Monterey. Recent issues of *Underwater* include articles pertaining to the history of commercial diving. To obtain a complimentary subscription to Underwater Magazine contact them at 281-516-0350, or check their web site at www.underwater.com. Please state that you are an HDS member when applying for a free subscription.

Fund Raising

Several members have asked if the Society will be hosting another matching fund-raising drive, similar to last year's successful drive where members were challenged, and matched, a $25,000 pledge from Lee Selisky. This type of fund-raising program is a part of the new Strategic Plan, but requires someone to come forward with a pledge that the membership can match. At this time no one has come forward, but the Society continues to work in other areas of fund raising and is hopeful that we can reintroduce the matching program in 2008.

Membership

Shortly after the Society was initially formed, several attorneys specializing in not-for-profit incorporations were asked for an opinion on how to structure the HDS USA, as we were a membership based organization. Their advice was to structure along the lines of successful non-profits such as the National Geographic Society, Public Broadcasting Service, Divers Alert Network, and the Cousteau Society, whereby "membership" is subscription based, and the direction, administration, and integrity of the organization is the responsibility of the Board of Directors.

The BOD is the actual voting member. As with all non-profits, the IRS and State Attorney General's office are our partners and have oversight. This system allows the Directors to focus on the purpose and mission of the Society rather than running a regular exercise in grassroots democracy along the lines of politically organized non-profits.

HDS Canada is structured this way. The Directors are charged with acting in the best interests of the Society and thus have to exercise prudent judgment and due diligence in all matters affecting the Society. We are recording this, here, as a clarification of how the Society operates and who is ultimately responsible for its well being and stability.

2008

The Society will appear at: Underwater Intervention, New Orleans on Jan. 29-31, Boston Sea Rovers Clinic, Boston on March 7-9, American Academy of Underwater Scientists, La Jolla, Calif., on March 11- 15, and Beneath The Sea, in Secaucus, New Jersey on March 28-30. We hope to see you at one of these events.

Helmets of the Deep

Siebe Gorman & Co. Ltd.England.

Custom 4 light, 12 bolt, Serial No. 19445

This helmet comprises of a standard Siebe Gorman shell and 12 bolt breastplate which has been customized along the lines of an American commercial helmet. The side ports are positioned horizontally, similar to a style of Morse and DESCO commercial helmets of the mid 20th century. The port guards appear to be Siebe Gorman. The exhaust appears to be a standard USN Mark V with chin button.

The normal Siebe weight studs on the breastplate have been replaced with lashing eyes similar those on a USN Mark V, and an American spring-loaded locking device has been positioned on the bonnet neck ring to the left of the face plate. The top fourth light is round and is stock Siebe Gorman. There is a company asset number 09-01-050 etched into the front of the breastplate and on the top of the speaker housing. This type of etching of company asset numbers was commonplace in the early Santa Barbara-based oilfield companies, like Ocean Systems and DIVCON.

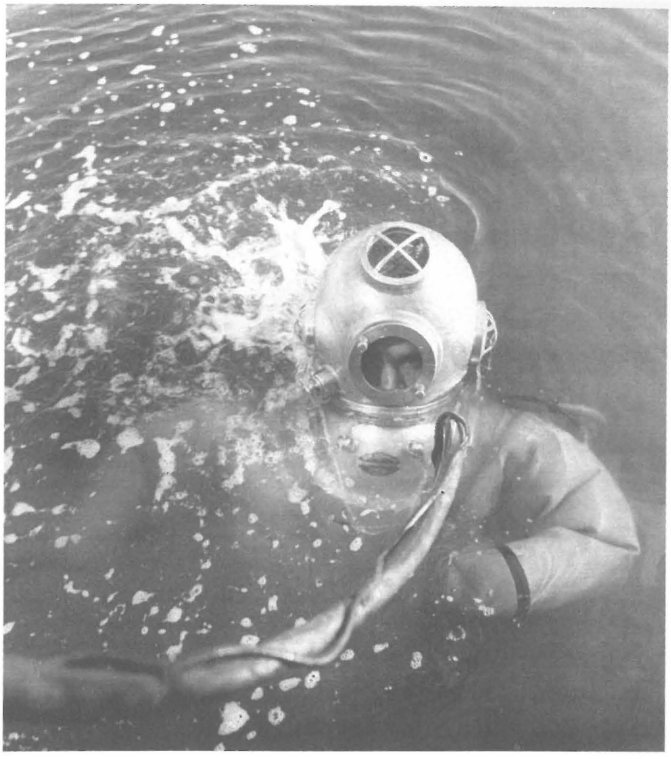
There are two other examples of this configuration of Siebe Gorman that I have seen. The first is on page 62 of Leon Lyons' *Helmets of the Deep*. That model appears to be identical to the one shown here. The second model can be seen on page 164 of Chris Swann's new book, The History of Oilfield Diving. This shows a photo of the late DIVCON founder Murray Black on the surface with a similar helmet that does not have the front locking device. The photo caption states, "Murray Black in his bespoke Siebe Gorman helmet." Another photo of Black dressing into the same helmet was included in Black's Obituary on page 55 of HDM No. 39.

Prior to the publication of Chris's book, it was speculated that these "American" style Siebe Gormans were custom ordered for the North Sea by an oilfield diving company with roots in Santa Barbara. This was partly based on the etching of the asset numbers, and the photos of Murray Black wearing one. Prior to their North Sea adventures DIVCON had some helium helmets constructed on Morse shells that have the exact side view port, exhaust, lashing eyes, and locking device configuration that is on this Siebe Gorman. Black can be seen with one of these Morse helmets on page 59 of his book, *Between the Devil and the Deep*, prior to his 525-foot working dive off Libya.

During the research for his book, Chris uncovered more of the story and included it in the text on the chapter about the North Sea. "Divcon worked exclusively in heavy gear. The helmets were either Siebe Gorman standard pattern, which had no top port, or the lighter American designs. Black had Siebe Gorman make a helmet for him with the oval side-windows mounted horizontally instead of vertically to provide better lateral visibility."

This would seem to confirm that Black had at least one of these helmets made and possibly more. If Black only ordered one helmet then perhaps another company ordered the same style of helmet from Siebe Gorman. If any reader has more information on these helmets we are more than happy to publish it.

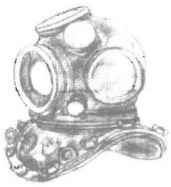
— Leslie Leaney



Murray Black wearing an example of the helmet in question.

HISTORICAL DIVING SOCIETY CANADA

Martin Scholler and International Divers Corp.



BY PHIL NUYTTEN

Historical Diving Society — Canada is in the process of gathering information for a comprehensive monograph on Martin Scholler and International Divers. International Divers offered a wide range of products, including the suit shown here and the scuba regulators shown in this reproduction of a 1960 catalog.

Back in the year 1952, everyone was making diving suits from glued together sheet rubber (of which the seam came apart in the hot sun). Martin Scholler of International Divers Corp developed a process to make Seamless Molded Rubber Diving Suits, all in one piece with no seams and another added feature; they have been made reversible having a different color inside and out. See the picture of Martin and his 80 lb. Musky.

Another new product made by Martin, in around 1954, was a fiberglass demand regulator made much stronger than the metal housings made at that time.

Visit: www.atlassolutions.ca for many other innovations we have put on the market place and type Martin Scholler into your Search Engine for even more information.

Scholler, circa 1954, with his seamless molded diving suit and an 80 lb. Musky caught while spearfishing in the St. Lawrence River, near Montreal, Canada.

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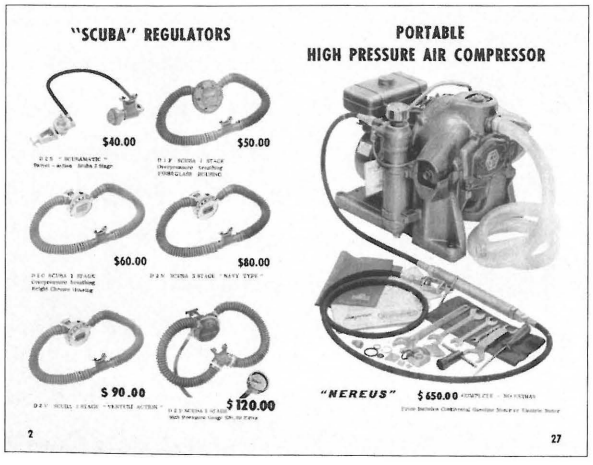
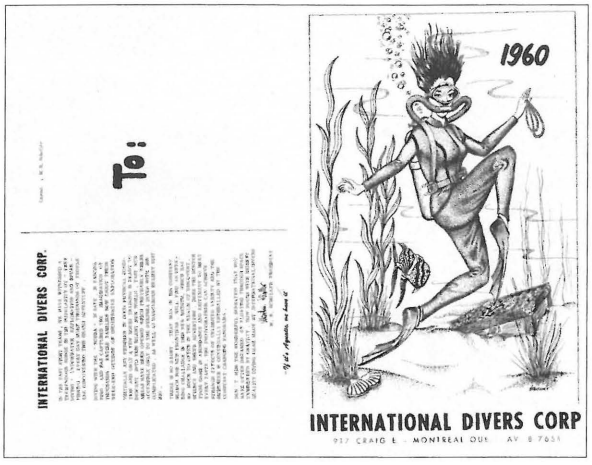




Pages from the 1960 International Divers Corp. catalog.

Recent Published History

A listing of recent articles on diving history and related subjects appearing in other publications. Please send submissions to the Publisher, at the Society address on Page 1.

The Origins of SAT [diving]. Reprint of a January 1967 *Skin Diver* magazine article by Jerry O'Niell on pioneering saturation diving on the Smith Mountain Dam project in Virginia. *Underwater Magazine* July/August 2007. www.underwater.com

Picture of a Fallen Oak, by Daniel Johnson. HMS *Royal Oak* was an early casualty of WWII when she was torpedoed by *U-47* in 1939. This article reports on a recent government ordered underwater survey of the wreck. International Ocean Systems, volume 11, number 4, July/August 2007.

Shadow Divers. An interview with John Chatterton, by Dave Moran. *Dive Pacific* Issue 98 Feb./March 2007. www.DiveNewZealand.com

Diving the SS *Iron Knight*, by Paul Garske. Technical diving on the SS *Iron Knight* which was sunk by Japanese submarine I-31 on February 8, 1943. *Dive Pacific* Issue 98 Feb./March 2007. www.DiveNewZealand.com

WWII Japanese Midget Submarine Discovered, by Peter Fields. The finding of *M-24*, the missing third midget submarine which attacked shipping in Sydney Harbor during WWII. *Dive Pacific* Issue 98 Feb/March 2007. www.DiveNewZealand.com

It's Such A Perfect Day, by Leigh Bishop. Technical diving on the famous wreck of the RMS *Niagara*, sunk by a German mine in 1940, including recovery of the ship's bell. *DIVER*, July 2007. www.divernet.com

Odyssey of Ericsson's Ironclad, by Craig L. Symonds. Conserving the Iconic Turret. History, salvage and conservation of the ironclad USS *Monitor*. *Naval History*, April 2007. www.usni.org

Hard Rocks and Hard Hats in Brownstone Quarry Park Conn., by Janice Raber. A report of the first classic diving equipment event held at the newly opened quarry water park with equipment from HDS members Bob Rusnak and Wayne Collins. *Long Island Boating World*, August 2007. www.liboatingworld.com.

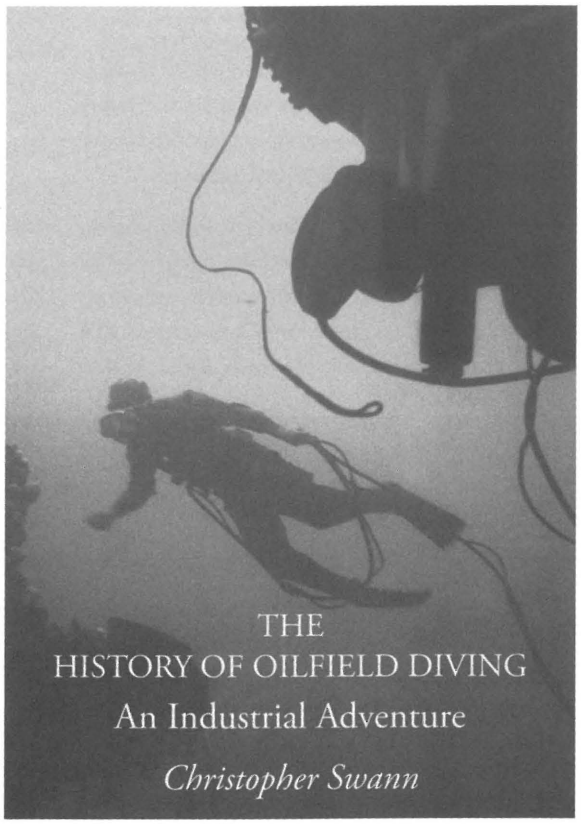
Deep Wreck Photography Camera Equipment. Leigh Bishop interviewed by Dave Moran. *Dive Pacific* Issue 102 Oct/Nov 2007. www.DiveNewZealand.com.

Dr. Roger Hanlon interviewed by Rhonda Moniz. Dr. Hanlon works out of Woods Hole Marine Biological Laboratory and is one of the world's leading experts on cephalopods. *Fathoms* magazine number 20, www.FathomsMagazine.com

25 Greatest Diving Photos of All Time, selected by, Doubilet, Frink, Greenberg and Watt. An historic portfolio of images from Hans Hass, W.H. Longley and Charles Martin, Ernie Brooks, Howard Hall, Luis Marden, Bates Littlehales, Doug Perrine, Bob Talbot, Amos Nachoum, Marty Snyderman, Jim Watt, Michael Aw, David Doubilet, Stephen Frink, Doc White, Chris Newbert, Chris Fallows, and Emory Kristof. *Scuba Diving* Magazine, July 2007. www.scubadiving.com

The History of Oilfield Diving
An Industrial Adventure

By Christopher Swann



REVIEWED BY TORRANCE R. PARKER

Until the end of World War II and the birth of offshore oil diving, the world's professional diving community was indeed a small one. In America, fewer than 100 commercial divers were employed in the fields of underwater construction, salvage and maintenance of engineered structures on a full-time basis. In the field of fishery diving, about 200 sponge divers worked out of the Greek sponge diving community of Tarpon Springs, in the Gulf of Mexico. An even smaller group of open-sea fishery divers harvested abalone, agar-rich seaweeds, corals, and sea shells from U.S. waters. Even when combined, these prewar commercial diving and fishery trades employed only about 400 divers. Other maritime nations had similarly low diver populations.

Within a decade after the war — and quite dramatically — an incredible increase in the number of professional divers occurred with the beginning of offshore oil exploration and production. The emergence of oil field diving created the biggest expansion in diving since the first practical compressed air diving by Charles Deane in 1828. It began with a handful of divers working for oil companies and their drilling contractors in the Gulf of Mexico and California waters. As the large international oil companies extended their offshore operations overseas the ever-widening need for oil divers continued to evolve, further enlarging this new and fledgling diving industry. Coincidentally, recreational SCUBA divers started to appear on the scene. Within a few decades the number of divers in the United States, counting those diving for sport, increased from about 400 to several hundred thousand! Comparable spectacular increases soon began to occur worldwide.

I believe *The History of Oilfield Diving* is the most comprehensive and complete story, to detail oil field diving history and its explosive growth ever written. It is a monumental work, and without any doubt will become the primary reference source for those reviewing oil diving pioneers, advancements in deep diving technology, development of sub-sea drilling methods, and the founding of large international diving companies. Its scope and magnitude are unprecedented. *The History of Oilfield Diving* printed text alone runs 774 pages — not counting appendix, glossary, conversion table, sources, acknowledgments, and index. I don't know of any publication that can compare to it.

Author Christopher Swann spent 19 years researching and writing the book. In the book's preface Swann writes … "had I known what I was letting myself in for I would not have started. My original list

of interview candidates ran to about 25 names, the final total was 107." Thankfully, Swann persevered to finish his project.

The book's contents are divided into 64 chapters. Each chapter is like a book in itself, filled with a kaleidoscope of characters and events — all too numerous to relate in a two-page book review. Briefly, however, the early chapters of the book deal with the history of ocean oil operations off southern California's shoreline and the Gulf of Mexico. Included is historical information concerning California's earliest divers to work on oil platforms, followed by the stories of the first divers to do oil work in the Gulf of Mexico.

Many of these divers established successful diving companies in the process. Later chapters, covering post-World War II oil operations, detail the development of rotary drilling technology from floating vessels in California waters, and the divers who pushed past the limits of deep air diving to make that work possible. Exciting first-hand accounts of the people who pioneered helium gas mixtures, their research and development work — sometimes while on the job — to revise existing decompression tables for commercial operations, and their often terrifying bouts with oxygen poisoning and bends are reminiscent of Lindberg's and Armstrong's pioneering air and space exploits.

With the early oil diving era being extremely risky, many divers tell their stories of close calls and fatal accidents. Following these adventures are stories of diving in Libya, the North Sea, and Alaska, told in the words of the original founders, the formation of General Offshore Divers, Divcon, Ocean Systems and Cal Dive.

Starting about midway in the book is information on the development of saturation diving, utilizing the Taylor Diving & Salvage bell diving in the North Sea and their hyperbaric welding operations.

There is a very interesting interview with the founder of COMEX, who talks about its early beginning. Other chapters include Australian oil diving operations, International Divers work, construction of an oil platform in 1,000 feet of water, and the spectacular operations of Sub Sea International during the construction of the BP Forties oil platforms.

Many other historic events follow in later chapters, including the birth of ADCI, oil work in South-East Asia, atmospheric diving suits, manned submersibles, and the development and role of the ROV in deep-water oil drilling.

Swann's book is truly encyclopedic of oil diving history in all its aspects. There are two indexes: a general index and a people index. Combined, the two indexes total 35 pages. You will find them invaluable when searching for information on people and events.

This is only a brief synopsis of *The History of Oilfield Diving* contents. It is not the type of book that you put by your bedside and finish in a few nights. Rather, it is a book that will find a special place in your diving library — a book that you will take from your bookshelf from time to time to reread a chapter or two for many years to come.

850 pages with B&W photos and an 8-page color section. Nine maps, a bibliographical reference, appendices and an index are included. Hardcover: 7 x 10 inches, with dust jacket. Price $80.00 plus $11 domestic postage, Calif. residents add 7.25% Calif. sales tax. Overseas pricing, please contact the HDS office.

Early Diving Lectures for US Citizens

Hans Hass is recognized not only for his pioneering developments in free-diving and underwater photography, but as one of the first to lecture publicly about his experiences under water.

Hass began lecturing in 1937 at the age of 18. What is not widely known is that along with his lectures in Europe, he also lectured to US citizens. Hans visited the United States in the summer 1940, on his way back home from the Caribbean to Vienna, and used the opportunity to give two public lectures, one in New York and one in Los Angeles. Preserved in the Hans-Hass-Institute archives is the original invitation letter for the Los Angeles lecture. It was scheduled for July 5th 1940 in the "Deutscher Klub," on Western Avenue.

In 1945, a few months after the war, Hass gave further lectures for US citizens... but not inside the States. As the story goes, Hans lived in Mayrhofen, Austria as the 42nd Infantry Division, called "Rainbow Division," occupied the region. During those days he had nothing to eat and his house was widely destroyed. So he asked the American commander of the infantry unit for a job with the army. The commander was interested in Hass' underwater research, and so Hans went to Salzburg, Austria, where the "Rainbow Division" had their Headquarters. There, in November of 1945, he began with a series of lectures titled "Men and Sharks" for the US soldiers and officers. The lectures were presented by the Special Service Office (SSO) of the Rainbow Division. Hass stayed with the US Army for several months, before moving into his new house at the Wolfgangsee.

Deutscher Klub
ZU LOS ANGELES

den 28. Juni 1940

Der Deutsche Klub ladet Sie und Ihre Angehörigen freundlichst ein zu einem

VORTRAGSABEND
mit Film - Vorführung

am Freitag, den 5. Juli 1940 im Nikabob Cafe, 875 S. Western Avenue, Los Angeles, California.

Nach gemeinsamen Abendessen wird Herr Hans Hass, welcher gerade von einer längeren Reise aus Süd-Amerika und den Westindischen Inseln zurückgekehrt ist, über das Thema

Jagd unter Wasser mit Harpune und Kamera

sprechen.

Ausser dem Vortragenden werden noch die Herren von Wurzian und Boehler, alle von der Wiener Universität zur weiteren Diskussion über dieses interessante Thema anwesend sein.

Abendessen um 6:30
Vortrag pünktlich 8 Uhr
Gedeck $1.00 pro Person

Anmeldungen bitte auf beiliegender Karte an den Schriftführer einzusenden.

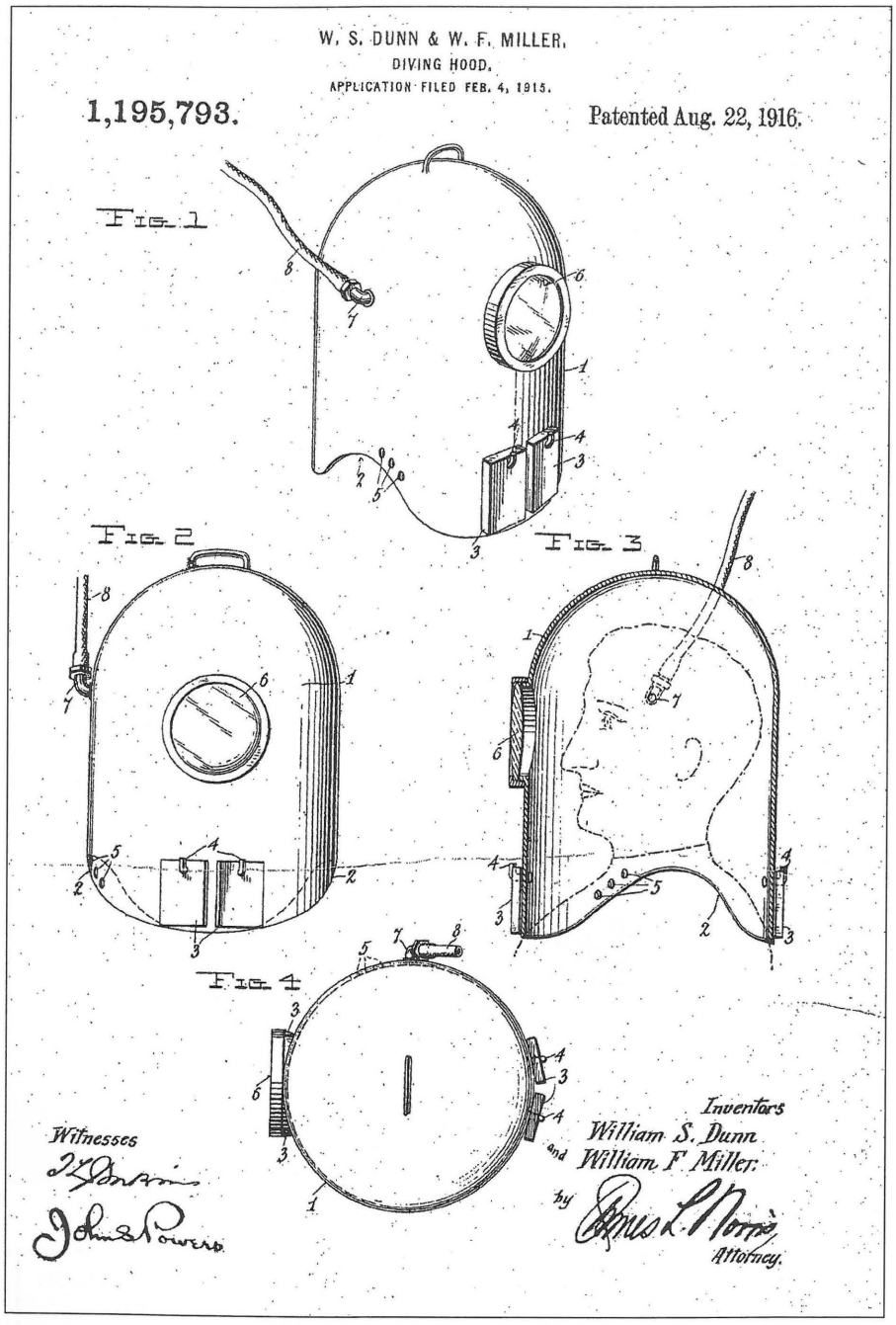
Der Deutsche Klub
i. A.
Hans F. Bauer, Schriftführer

42ND INFANTRY RAINBOW DIVISION
SPECIAL SERVICE OFFICE

Menschen unter Haien

Ein Vortrag des bekannten Wiener Unterwasserforschers
DR. HANS HASS

Miller-Dunn Diving Hoods


W. S. DUNN & W. F. MILLER.
DIVING HOOD.
APPLICATION FILED FEB. 4, 1915.
1,195,793. Patented Aug. 22, 1916.
FIG. 1
FIG. 2
FIG. 3
FIG. 4
Witnesses
Inventors
William S. Dunn
and William F. Miller.
by James L. Norris
Attorney.

On August 22, 1916 Patent Number 1,195,793 was issued to William S. Dunn and William F. Miller for their "Diving Hood". The patent had been applied for on February 4, 1915.

JAMES VOROSMARTI, MD

This was for "an improved diving hood which is specially constructed whereby it may be worn without the usual diving suit and is complete in itself as the diving armor."

The helmet is the cylindrical with extension in the front and back to reach below the shoulders of the wearer. The bottom edge of the helmet is shaped so as to conform to the general shape of the body and rests on the shoulders. Hooks on the bottom extension are for hanging weights to keep the helmet securely on the diver. Air is supplied through an inlet on the right upper part of the helmet through an elbow and exhausts through the bottom of the helmet and through small holes near the shoulders. A round sight glass is set into the front of the helmet.

The inventors list many advantages to this open helmet. It is easily donned and removed because it has no attachments. There are no valves required for operation. Since it is easy to remove the diver can easily duck out of it and ascend to the surface (air embolism and their cause was not known in 1916). They also state it can be used as a form of air reservoir - the diver, if unable to reach something that is close by can take off the helmet and leave it hanging from the air hose, get what he wants and get back into the helmet with no trouble. They also state that it can be used in any position, but obviously the diver would not want to bend over too far! Finally, they claim that because the air volume is so small compared to the normal closed diving dress, that the ears are protected against excessive pressure and injury. This is certainly an advantage that is not present, as the air volume of a diving dress has nothing to do with ear squeezes.

Almost ten years to the day (August 10, 1926), William Miller was awarded Patent Number 1,595,908 for the second version of the Diving Hood. The application date was December 18 1923. The second version differs from the first in only two ways. The sight opening is much larger and is oblong with the lower section extending down almost to the bottom of the helmet. This was done to provide the diver a much larger field of vision without moving his head and thorax than the small circular sight in the original version. It is also stated that this modification makes it easier to change the glass if required. The frame for the glass was molded onto the helmet and angled to the front of the helmet. The two pieces of glass were held in position with gaskets and brass frames bolted to the helmet. The other modification was that the bottom of the helmet over the shoulders was winged to provide more comfort for the diver in comparison to the sharp edge on the original version.

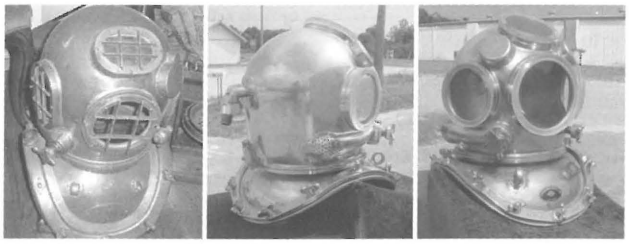
The third version of the diving hood appeared in the 40s. I have been unable to find a patent for this version and others interested in diving history have told me that this version was probably not patented. This was probably because the only obvious change in this version was that the front sight was changed to a single flat square and circular side sights were provided. The change in the front sight was probably to get rid of the distortion caused by the angled glass in version 2.

These shallow water hoods were extremely popular throughout the world from the time the first was introduced until the 1950s when SCUBA began to be popular. This was in spite of several drawbacks. As mentioned above, the diver could not bend over very far. There was no protection in very cold water and the diver had to ensure that his diving hose was secured to him (usually by looping the air hose under his left arm) so that the helmet was not inadvertently pulled off by an overzealous tender.

Internet Auctions

Internet auctions and sales during recent months. Prices are rounded to the next highest dollar. The content of this column is provided in good faith by members for general interest and is not a definitive guide. Vendors' opinions of what items are, and what condition is, are not consistent. The HDS-USA and HDM are not responsible for any errors in descriptions, listings or prices. Items that Failed To Meet their Reserve (FTMR) have their highest bids listed.

Helmet Auctions



Desco helmet (left) Yokohama helmet, (center and right).

During the auction period recorded there were an abundance of TOA helmets for bid, with the majority offered by a seller in Japan. The prices varied depending upon condition. Shipping costs to the USA ranged from $140 to $230, which will have affected the sale price. The highest prices were for Japanese helmets located in America, with an early Kirby style Yokohama air reaching near $8,000.

AMERICA

DESCO U.S. Navy Mark V breastplate dated 7-7- 44 serial # 1421 with what appeared to be a Morse Mark V style bonnet with Morse commercial vertical side ports, top port, and a Morse commercial screw in face port. No tinning but in very good condition. Sold $6,375 (Photo).

DESCO U.S. Navy Mark V dated 9/80 serial # 194. Appeared to be unused. With metal Morse helmet chest and a pair of canvas diving boots. Sold $5,900.

Miller Dunn Style 3 Divinhood with original weights. Appeared to be in very good condition. Sold $6,275.

A. J. Morse & Son Inc. 3 light neck feed commercial, serial # 1362, stated as all matching. Well-used with a heavy patina. The straps and some nuts were modern replacements from Morse. Failed to sell at $12,000 Buy It Now.

Morse Diving Equipment Co. Ltd. U.S. Navy Mark V dated 7-8-42, tag # 744, serial # 4387. Appeared to be in good condition with a few small solder spots on the bonnet. Part of the collection of the late Carlos Dominguez. Sold $7,320.

Savoie stainless steel # S-31. Appeared to be in very good condition. Sold $6,560.

Snead shallow water helmet. Third style. Well used. Located in Puerto Rico. Sold $1,125.

U.S. Divers Com Hat missing neck seal. Incorrectly described as a Kirby Morgan helmet that took part in ENTEX 9 of the Hyperbaric Center of the French Navy, reaching a depth of 613 meters. Located in France. Sold $2,743.

JAPAN

Nippon Sensui standard 3 light. Straight bar side port guards. Tag read Kabushi Kikaisha — Tokyo City — Fukugawa. Appeared to be in good condition. Located in Australia. Sold $3,420.

TOA Pearler, red tag, in very good condition. Part of the collection of the late Carlos Dominguez. Sold $4,749.

TOA standard 3 light. Tokyo - Minamisenji tag. Appeared to be in good condition and stated as being from the 1920's. Sold $3,310.

TOA standard 3 light. Tokyo - Minamisenji tag. Appeared to be in good condition. Located in Japan. Sold $2,182.

TOA standard 3 light. Missing tag and a nut. Located in Japan. Sold $2,136.

TOA standard 3 light. Missing tag. With original shipping box. Located in Japan. Sold $1,580.

TOA standard 3 light. Missing nuts and other components. Located in Japan. Sold $1,608.

TOA (probably) standard 3 light. With flashlight attached. Missing straps, nuts, locking device. Located in Japan. Sold $ 787.

Yokohama 3 light with diamond style port guards and with a complete name tag. In used but, good, complete condition. Located in Australia. Sold $3,161.

Yokohama Kirby style air hat, last style of bonnet. Appeared to be unused with full tinning. Sold $4,057.

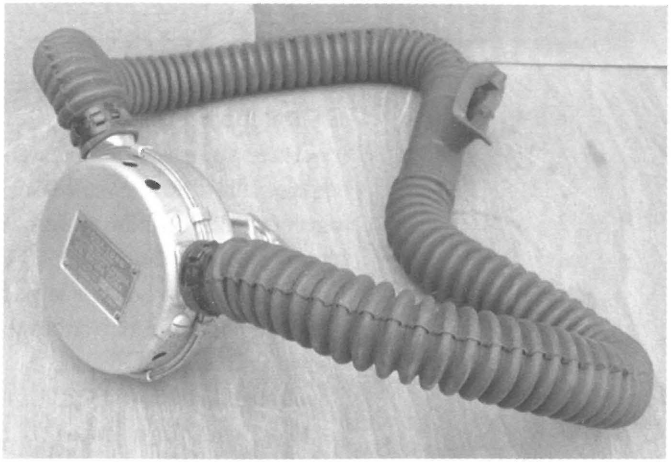
Yokohama Kirby style air hat, first style of bonnet with separate inlet elbows. Appeared to be in very good condition with full tinning. Sold $7,877 (Photo).

UK

Siebe Gorman & Co. Ltd. 6 bolt. Serial # 16202, stated as matched. Appeared to be in very good condition with dark patina. Sold $7,400.

Siebe Gorman & Co. Ltd. 12 bolt. Serial #19312. Photograph showed the bonnet resting on the breastplate neck ring, not attached. Appeared in very good condition with additional reproduction Siebe Gorman items. Located in India. Sold $3,910.

Scuba Auctions



VINTAGE SCUBA

Northill Air-Lung regulator, tank and harness in good + cond. $950.

Northill Air-Lung double hose regulator complete, good cond. $700.

US Divers yellow label early Mistral w/ removable ex. port. $181.

US Divers blue label 2 stage regulator w/ blue hoses, mint. $565. (Photo).

Viking regulator & Viking back pack (missing one strap), good cond. $860.

SCUBA ACCESSORIES

Christie Speargun minus shaft, very unique. $512.

Hurricane speargun with loading lever. $510.

Northill regulator diaphragm for early 1955 model. $90.

Porta-Sub Sea Scooter, did not meet reserve of $760.

Sportsways Navy Depth Gauge. $179.

US Divers Vista-Rama deluxe yellow mask w/ box, in excellent cond. $140.

Voit B12B-S blue mask w/box, James Bond model. $237.

Voit B-4 mask in blue, no rim band. $261.

Voit B4B blue mask w/box, SEA HUNT model. $714.

WWII UDT Churchill fins, black and excellent, used by C.W. "Bits" Osner, a Navy photographer who went to the South Pole with Admiral Byrd. $1,193.

UNDERWATER CAMERAS

Aqua Cam Mark I camera and flash unit. $204.

Calypso Camera body only, with neck strap, serial #2443. $356.

Calypso Camera body only, with neck strap, serial #2089. $505.

Nemrod Siluro camera. $104.

Nikonos I Camera complete with original boxes, and instruction booklet. $205.

Nikonos II Camera complete with flash unit, sport finder, leather cases for all, original instruction manual and original box for the flash unit. $125.

U/W CAMERA HOUSINGS

Bolex housing with original wooden case and accessories, appeared to be in exceptional condition. $1,125.

Bolex 16mm housing and some accessories. $630.

Giddings Cinemar I housing and sport-finder with Nikon Super-8 camera. Housing in excellent condition, camera not working. $204.

Hasselblad Superwide C Housing and camera. $5,547.

Oceanic Hydro 35 housing with additional port, lens gears and o-rings. $175. (Photo).

Rebikoff housing and Kodak 404 Instamatic camera. $206.

Revere 88, 8mm movie camera in plexiglass housing. $305.

BOOKS, FILMS & EPHEMERA

10 Fathoms Deep, 1952, B&W 16mm film, 9 minutes. One of Cousteau's early films. $32.

Calypso and Aqua Flash advertisements. $118.

Dimitri Rebikoff prototype propulsion unit and note book (1951-1957). $1400.

Histoire de la NAVIGATION SOUS-MARINE. 111 EUR.

Hurricane magazine, 1954, w/ girl wearing blue mask. 351 EUR. (Photo).

Marx Blister Cards featuring *Skin Diver* & Monsters of the DEEP. $445.

Monogram 1948 model, U.S. Navy Frogmen and LCP(R) boat. $166.

Sea Hunt 2ea. 8X10 glossy stills of Lloyd Bridges from 1959. $35 & $16.

Scubapro 1972 equipment catalogue like new. $239.

Scubapro 1974 catalog like new. $203.

Classic Diving Equipment Groups

Due to the prevailing liability laws in America the HDS USA does not conduct any in-water activities. Some American-based divers have formed groups to restore, operate and preserve the classic equipment of America's rich diving heritage. These groups often contain divers who are members of the HDS-USA. The activities of these groups are not official HDS-USA functions and the HDS-USA is not involved in any of the activities of these groups. This column is produced solely for the interest of our readers. Please consult the HDS-USA disclaimer at the front of this issue.

Hard Hats Rock in the Brownstone Quarry

BY JANICE RABER

On a sunny three-day weekend in this past June a group of divers descended upon Brownstone Quarry Park in Portland, Connecticut to dive with the U.S. Navy Mark V and other vintage diving equipment. Organized by Bob Rusnak and Wayne Collins, members and volunteers of the Northeast Diving Equipment Group, The Historical Diving Society, the Long Island Divers Association, Sea Searchers Scuba Club from Long Island and Sea Gypsies from Manhattan, the Coney Island Polar Bears and the Cultural Research Divers from New York City gathered in the newly reopened quarry for an exciting weekend event.

Jan Raber, Dolores Rogers and Vreni Roduner.

"We brought a variety of surface supplied equipment besides the Mark V including modern Superlights, a Chinese helmet, a Russian helmet, shallow water helmets and some weird diving equipment for the folks to try," explained Bob. By weird, he was referring to the World War II gas mask that had been converted into a dive mask/helmet, born out of necessity for emergency rescue of men trapped in ships sunk during the attack on Pearl Harbor in 1941. It had a rubber faceplate and was sufficient for shallow-water diving.

"We had set up a complete dive station with underwater video and topside viewing right at the water's edge in the quarry," he added. Voice communication from surface to diver was maintained at all times thanks to Gene and Beth Ritter from the Cultural Research Divers.

Ray Tucker gave a briefing each day to everyone that wanted to try diving in the equipment, explaining, the ins and outs of the Mark V Classic Diving Equipment Groups. Each person who wanted to dive also had the opportunity to help dress and tend waiting divers before they suited up themselves so they would have a more complete understanding of the equipment.

Vreni Roduner

There were several women who successfully dove the Mark V rig, including Vreni Roduner, whom many will recognize from her work with Beneath the Sea (the largest diving exposition in the Northeast). Vreni is an accomplished scuba diver, and a member of the Women Divers Hall of Fame. "Being a scuba diver for over 30 years and having enjoyed every bit of it, I never had an opportunity to try a real old Hard Hat Diving System, so I just had to try it.," said Vreni. "Two tenders guided me into the water. They don't let novices go on their own. The divers control their own air volume as needed. The communication system was easy to hear and the support team checked often to see how the diver felt. Walking back up the bank was hard wearing the heavy lead boots that had the tendency to sink into the soft terrain, creating a bit of suction. Especially after breaking the water line, I was glad the second tender was there giving me additional assistance to walk back to the dressing station as my knees almost buckled under the load toward the end. I had a very exciting dive and a most interesting experience trying a new way to explore the underwater world. I felt totally comfortable and at ease in all that equipment."

The Brownstone Quarry, located an hour Northeast from the Bridgeport Ferry Terminal, is a newly opened water park that is still under development, but is completely operational. The owner/operators, three brothers, Ed, Frank and Sean Hayes and partner John Gremegna agreed to host the vintage divers and went out of their way make us feel welcome, making everything available at the quarry for our disposal.

This was a fitting place to try historical diving equipment, because the quarry is now designated

a National Historic Landmark. The beautiful brownstone that was mined here was popular for building during the 1880's through the early 1900's and was used in constructing brownstone apartments in Manhattan, Boston and Brooklyn. At one time the quarry employed 2,000 men and used 500 oxen to mine the stone. It was then taken by locomotive to the schooners on the Connecticut River for transport to New York City. Operation stopped in 1938 when a flood overflowed the river.

Bob Rusnak, Wayne Collins and Wayne Gerhardt in Mark V.

After it closed it became little more than a giant trash receptacle for years until the Hayes brothers cleaned it up. "Anything that could be dumped was dumped in here from 1939 on," said Frank Hayes. "We pulled out motorcycles, cars, Pepsi machines, air conditioners, pistols, rifles, and diamond rings. You name it." Today it is a scenic 27-acre family oriented park with an adventure theme surrounded by towering brownstone cliffs, some ninety feet high. The water is checked by the Health Department every week.

Some participants went on scuba to explore the quarry throughout the weekend. There are some sunken boats to investigate, underwater platforms at various depths to practice skills and plenty of fish. The quarry depth ranges from 20 - 100 ft. and visibility can vary, usually being about 20 ft.

Beth Ritter, who helped with the com box and umbilical hoses during the day, entertained us with guitar music and a sang a song she wrote about deep sea divers. The weekend was a tremendous success and a wonderful time was had by all. Everyone is looking forward to returning next year. Vreni summed it up saying, "What a unique and fantastic opportunity for a diver!"

Please visit the quarry web site at www.brownstonepark.com for additional information.

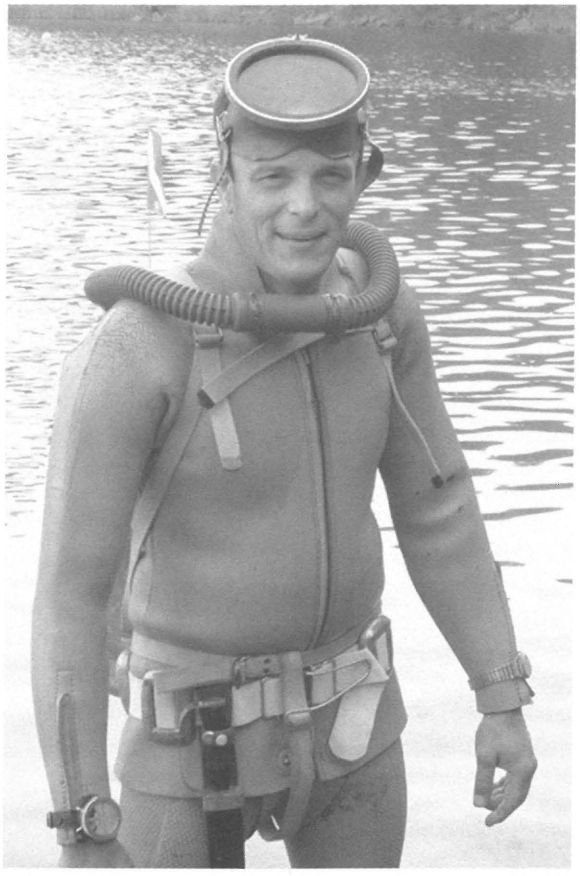
There are plenty of motels in the area and lots of places to eat. The Hayes family is planning to open a campground adjacent to the property.

Mike Nelson Visits Lake Wazee

BY DAN BARRINGER

Sea Hunt's "Mike Nelson" made an appearance at the 4th annual Vintage Dive Assembly at Lake Wazee near Black River Falls, Wisconsin. The four day event, sponsored by Vintage Scuba Supply and the Inland Divers Vintage Dive Club, began on August 2nd and continued through August 5th. The former mine quarry is now the deepest lake in Wisconsin and offers some of the best visibility, providing a mecca for divers from all over the area. Vintage scuba enthusiasts traveled from several different states to participate in the vintage dive, show off their gear, and swap stories and to buy, trade, and sell antique equipment.

HDS member Mike "Nelson" Follett appeared on Saturday, August 4th for the group photo and was authentically outfitted in gear similar to that used on the television show *Sea Hunt*, which ran from 1958 to 1961. He wore Lloyd Bridges' signature gray wet suit, twin 50 Voit tanks with green harness, and the Voit Lung single stage regulator with green hose assembly. The finishing touches included a Voit B4 mask, Voit Vulcan knife, Sportsways Navy depth gauge, and Voit Viking fins. However, the gray paint worked fine for about half an hour and then started coming off, which, in a way, was authentic too. The entire outfit created a visual likeness of the television icon that influenced so many generations of scuba divers.



Mike "Nelson" Follett

After the Saturday dive, participants were treated to a barbecue lunch and later that evening, watched original *Sea Hunt* episodes on 16mm film.

Vintage diving events are popping up all over the country as more and more divers are attracted to quality and simplicity of vintage scuba gear.

South Carolina Divers Take A Dive Into History

Wateree Dive Center, located in Columbia, S.C., celebrated its 30th anniversary a unique way. For the past 30 years, the father and son team of Larry and Andy Ogburn have worked side by side in the SCUBA diving industry. For their first 30 years in the industry Andy and Larry wanted to offer something distinctive to their dive clientele. Over the weekend of September 28, 29, and 30th, they presented their customers with the opportunity to dive an authentic U.S. Navy Model 1 Mark V Diving System from 1944.

On the night of Friday, September 28th, the dive center held a classroom session to familiarize ten fortunate students with the

Larry Ogburn, Justin Lee and Andy Ogburn.

history of the heavy gear as well as the proper ways to assemble and dive the diver's dress, breastplate, helmet, communications unit and air delivery system. This night was capped when one lucky student, Bryan Kyzer, was fully "dressed" in over 200 pounds of the MK V gear. Saturday and Sunday followed with actual open water experiences for all the MK V students at a local dive site. This was the highlight for divers after weeks of anticipation. While inside the MK V rig, Justin Lee celebrated his 51st dive at age 17; while Sam Templeton celebrated his birthday diving the MK V as the surface support team sang "Happy Birthday" through the surface to diver comm line. Will Roberts dove the suit to commemorate his 10th year of diving, while Larry Ogburn used the weekend to honor his 50 years of diving. Two of our favorite lady divers, Carrie Miller and Darcy Templeton made the walk in the heavy shoes & brass collar. With the close of the diving activities, everyone came back to the shop to celebrate the achievements of all the divers and finish the paperwork for their Surface Supplied Air Certifications. As time passes by, what will the next 30 years in the SCUBA industry bring for Wateree Dive Center?

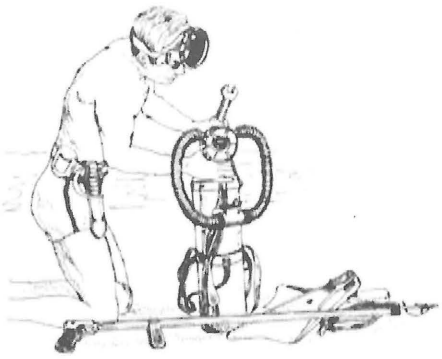
Mark V students at the Wataree Dive Center.

Wateree Dive Center, Inc.
wateree@msn.com
watereedivectr@sc.rr.com
www.watereescuba.com

SCUBA WORKSHOP

The U.S. Navy's MK VI and a SEALAB Accident

BY KENT ROCKWELL



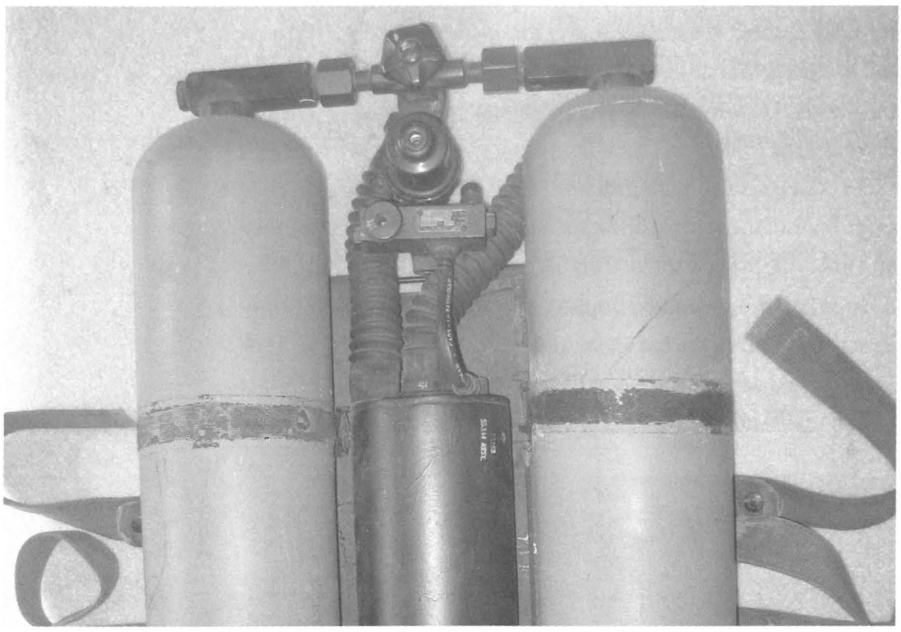
In this Scuba Workshop we begin exploring the Navy's Mark VI rebreather with a touch on its history and include a short story from HDS advisory board member Bob Barth about an accident involving the MK VI on SEALAB One.

The U.S. Navy's MK VI Semi-Closed Circuit Underwater Breathing Apparatus

BY KENT ROCKWELL

We've spent considerable research time and some money on the U.S. Navy's MK VI semi-closed circuit mixed-gas rebreather but nothing compared to the U.S. Navy; who invested not only money but many personnel in the procurement, development, testing, training, diving and sometimes dieing with this apparatus. Our interviews and research were helped by members of the Office of Naval Research and some extra-ordinary Navy sailors and civilians, as well. Names surface like Jim Bladh, Steve Bullock, Ed Gard, Richard Blackburn, Richard Vann and Bob Barth; all ex-Navy folks who contributed much of their time and materials to the HDS's MK VI project. To them we thank you and a special mention and thanks to Berni Campoli and Dr. Christian J. Lambertsen, who have prodded, poked and kicked us to see the story told. Bernie supplied hands on help with restoring our sample MK VI while Dr. Lambertsen supplied the back ground of its evolution and theory. In fact, the MK VI is just one chapter in Dr. Lambertsen's long and distinguished carrier in pioneering underwater research.

The MK VI story began back in 1940, when a young medical student became interested in the human respiratory process and combined that with his athletic interests in the sea. Doctor to be, Chris Lambertsen's fertile imagination conceived and developed an underwater breathing apparatus based on known closed circuit oxygen (O_2) rebreather principals. The O_2 rebreathing device was developed in 1878 by Henry A. Fleuss in collaboration with the Siebe, Gorman & Co., according to Sir Robert H. Davis in his book *Deep Diving and Submarine Operations*.



MK VI showing manifold, regulator and control block with ON-OFF lever.

It was intended for the use in mines and enclosed spaces but was used underwater successfully in 1882, some four years later. Lambertsen's work, however, was all his own. His design approach was based on scientific principals and research with little borrowed from what had gone before. I think he envisioned his rebreather would be fun to dive with, as well, but his pragmatic side would promote it for life-saving work.

Simply called the Lambertsen Lung by his professors and supporters the device would change from life saving to military missions and, through several variations, would become the Secret unit accepted by the war-time Office of Strategic Services (OSS). Oddly enough, the Navy's UDT swimmers did not use oxygen rebreathers or any SCUBA units during WW II. Lambertsen's final war-time unit had evolved from the back mounted breathing bag in a cage design to the horse shoe shaped over the shoulder bag and the name was changed to the LARU … the Lambertsen Amphibious Respiratory Unit.

The WW II LARU T-10's were manufactured by Ohio Chemical Company while the post-war versions, variously known as the 1952 LARU-2, the Emerson Diving Unit T-4 (Army), the Emerson Scubalung and the T-20, was built by Lambertsen's friend Jack Emerson

(the J.H. Emerson Company). Emerson was known for manufacturing the first practical medical iron lungs and his design approach and thinking was in complete agreement with Dr. Lambertsen's. The two became fast friends and collaborated on many underwater devices for which they both had a passion.

While designing his initial O_2 unit in 1940 Dr. Lambertsen had theorized using a mixed gas in his rebreather system to counter the toxic effects of pure oxygen at depths greater than 25 feet (1 atmosphere). During WW II, England's clearance divers had been using mixed gas in rebreathing units called the CDBA (Clearance Divers Breathing Apparatus). The U.S. Navy's Experimental Diving Unit dissected a CDBA and, with Lambertsen's and Emerson's assistance, developed the MK V semi-closed, mixed gas rebreather. Emerson manufactured the unit and it was accepted into the Navy in late 1959. This general layout would set the standard for modern rebreathers with a breathing bag riding over each shoulder ... one for inhalation and the other for exhalation ... a design Dr. Lambertsen pioneered through testing and modifying versions of the LARU T-4.

After a bout with the German Draëger O_2 units; the U.S. Navy accepted a new O_2 rebreather design from Emerson, the Scubalung 9-SO-3 and 9-SO-21 (Army), the Min-O-Lung 9-SO-R1 & R2 in late 1963 and with it the redesigned MK V ... the MK VI. Scubalung and MK VI featured improved over-the-shoulder breathing bags and a fairly rugged scrubber canister (the MK V's Achilles heel).

Unfortunately, for Dr. Lambertsen and Jack Emerson, the Navy saw fit to award the MK VI's production contract to Scott Aviation in Buffalo, New York. Emerson and Lambertsen were not too happy and decided it was time to get out of the SCUBA equipment manufacturing business. Westinghouse Electric's Underseas Division took over Emerson's O_2 rebreathers some three years later, in 1966.

The MK VI semi-closed mixed gas rebreather can use several pre-mixed gases ... like the now common 60/40 O_2N_2 mix (60% oxygen and 40% nitrogen) used in place of the depth limiting pure oxygen (100% O_2). We won't go into the selection of mixes at this time but the reason for the introduction of the inert nitrogen in the gas mixture is to dilute the pure oxygen so that you can dive deeper ... and still retain the rebreather's miserly gas consumption advantages.

The reason for the semi-closed nomenclature is that as you re-breath the gas, circulating through the breathing bags and the CO_2 absorbing canister, your body is slowly burning up the O_2 out of the mixture. The regulating system on the MK VI feeds you more pre-mix at a predetermined, fixed, rate to make up for the lost oxygen ... and, since it has a fixed gas in-flow, it exhausts small amounts of extra gas that builds up in the system through an exhaust valve mounted on left exhaust bag.

In our short story from Bob Barth, you will see just what happens when the inflow of fresh gas stops for whatever reason (in most cases the gas was not turned on, the feed hose to the canister popped off or the tanks ran low on gas). The only warning, if you're paying attention, would be the slow increase in the breathing bags volume and the slight exhaust of gas bubbles from the exhaust valve at around every third breath.

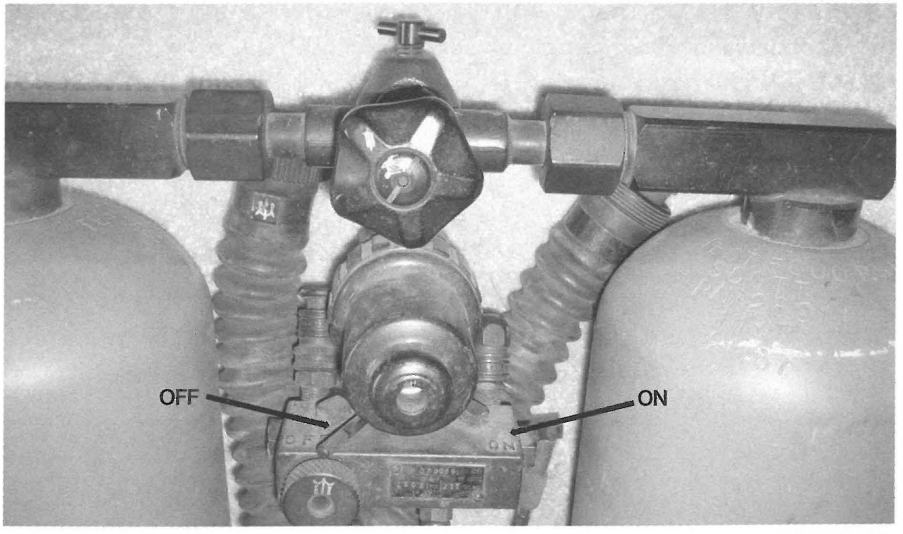
SEALAB ACCIDENT
Lesson Learned

BY BOB BARTH

Some 43 years ago, a hand full of Navy underwater folks found themselves on a unique diving job, the place, near the island of Bermuda. Water depth, between 192 and195 feet, visibility as clear as a fresh water spring, water temperature in the low 80s; as far as a great place to dive it left little to be desired. Four of the divers in this group planned to dive to 193 feet with an eventual bottom time of about 16,500 minutes. In-water work was accomplished by a semi-closed circuit apparatus called a Mark VI and some big scuba bottles. The breathing gas used in both systems was helium and oxygen. With the stated bottom time, you can identify the dive as saturation. The occasion was the U.S. Navy's first underwater habitat, SEALAB One.

The first SEALAB was fashioned from two old steel floats that had been laying in a scrap yard at the Navy base in Panama City. In those days, saturation systems where nowhere to be found; the only folks who knew anything about staying on the ocean floor were the Cousteau's and their method was habitats. Our SEALAB boss, Dr. George Bond, decided that if it worked for the French it would work for the U.S. Navy. The builders at Mine Defense Lab (MDL) at Panama City were willing to build the habitat and did. It sat on the bottom with its crew for a lengthy stay.

With its limited budget, the SEALAB program was short on diving equipment. They didn't have enough MK-VIs to keep everyone in the water, so the support crew topside decided to charge large aluminum 80's with helium and the proper amount of



MK VI control block with ON-OFF lever.

oxygen, and send these down to the saturated divers. However, at 200 feet an open circuit rig didn't give you a great deal of "outside time" [outside of SEALAB as they were already on the bottom]. On the other hand, the MK-VI could provide plenty of "outside time" with its rebreathing system. As anyone knows that has used the "six," it has its many advantages but it can also jump up and bite you on the ass.

Early one morning, and about half way through their stay, the SEALAB boys were informed that a small submarine, built by the Electric Boat Company and called *Star One*, would be visiting SEALAB. Two divers elected to go and visit *Star One*. The diver using the MK-VI on that dive was Sanders Manning; the other diver was using the open-circuit bottles. SEALAB One was a bit difficult to get in and out of, you had to go down a five-foot ladder, shuffle through and around some obstacles and eventually exit the protective shark cage. By the time you got outside, you had worked a bit to get there. In his exit procedure, Manning inadvertently bumped closed the throw lever that controlled gas flow to his six; he was outside just breathing the gas in the bags and nothing more.

It doesn't take too long to find out that the rig is not working correctly but a hell of a lot less time to lose consciousness. Going through this rapid mental procedure, Manning realized he needed to get back into the safety of the habitat, but he didn't make it. As he reached the bottom of the ladder he passed out. On duty that morning, in the habitat, was Lester Anderson. Andy heard a clanging noise down by the ladder and went to investigate. The clanging noise was Manning falling over as he tried to get on the ladder. Needless to say, Andy was a bit busy for a few minutes and with the help of Doctor Bob Thompson (who was the SEALAB doctor on the bottom) they got Manning back into the habitat and breathing again. The ordeal turned Manning's eyes black but after a few of days he was back to normal. "Lesson learned," keep an eye on your equipment and your diving buddy.

Manning and Anderson are no longer with us, they both died several years ago. What was learned in the SEALAB program about saturation diving and its associated equipment went on to refine the techniques that put saturation diving on the map. What is seldom mentioned is the great experiences the SEALAB divers will always remember. I was the 4th guy down there and I have spent a lot of years enjoying my memories — some not always fondly — but none the less irreplaceable. I have Uncle Sam's diving Navy to thank for that.

Bob Barth participated in all three SEALAB programs and has a lot more stories to tell.

—Editor

In Memory
Hugh "Dan" Wilson
March 13, 1929 - August 14, 2007

Hugh "Dan" Wilson grew up in Wilmington, California, close to Los Angeles harbor. At the age of ten he drew up a design for a diving barge and built a diving helmet from an old hot water heater, which he took on his bicycle to show to the diver Charlie Smale. Watched secretly by his mother and a neighbor, he made his first dive at the launching ways of a shipyard, supplied with air by a friend using a large bicycle pump.

After service in the Marine Corps, Dan enrolled at the Sparling School of Deep Sea Diving. On graduation, he set up a salvage company with two friends, only to find there was not enough work to keep them employed. He then turned to abalone diving. At the end of 1955, he moved to Santa Barbara to start an abalone processing business, which he ran with his wife Dorothy who oversaw the operation when he was out diving. His companies, Anchor Abalone and Ocean Harvest Products, produced over five million pounds of Abalone and were the largest producers of abalone in the world. He logged over 10,000 hours in both light and heavy diving gear from 1948 through 1962.

Dan was well aware that the oil companies drilling in the Santa Barbara Channel were pushing the limits of traditional commercial diving. At that time, all diving outside of the navy was done on air and the exploratory wells in the Channel were in 200-250 feet of water, a depth at which nitrogen narcosis becomes a serious limitation.

The U.S. Navy recirculator helmet was far too cumbersome for commercial diving and Dan did not have the money to buy and modify one. Instead, he had a radiator shop knock a piece out of the front of his Japanese abalone helmet and solder in a bubble to take the second stage of one of the new Sportsways single hose scuba regulators. To complete the

Dan Wilson after his 400-foot dive.

arrangement, he had a fitting made to clamp the Sportsways first stage onto a standard navy belly valve, with a second valve to route the gas either to the regulator or straight into the helmet on open-circuit.

With this equipment, on November 3, 1962, Dan descended to 400 feet. This opened the door to Phillips Petroleum, who, like the other oil companies operating in the area, were dependent on one diving contractor, Associated Divers. Associated had given passing consideration to modifying the navy helium equipment but continued to dive on air.

Phillips decided to give Wilson and his new company, General Offshore Divers, a chance. Against considerable odds, he and his team succeeded and within a year General Offshore had dethroned Associated.

In September 1963, Dan contacted Ed Link, whose "Man-in-Sea" program had received considerable publicity. As it turned out, Link had just teamed up his company General Precision with Union Carbide to form a deep diving entity, Ocean Systems. The new company had almost unlimited financial resources, as well as the experimental facilities of Linde Gas and an impressive list of high-ranking former naval officers. What it lacked was an operational arm.

Accordingly, in the late summer of 1964, Wilson and his partners-including Lad Handelman, Whitey Stefens, and Jon Lindbergh (who had recently joined the group)-sold General Offshore to Union Carbide. General Offshore was then rolled into Ocean Systems.

One of Dan's first responsibilities was to build the Purisima, the first commercial lockout diving bell, which he had designed and patented before the sale to Union Carbide. The bell was tested off Santa Barbara in early 1965. Although unsuccessful, it marked the beginning of a new era in which deep-diving work would be done from bells rather than from the surface.

Dan soon began to feel that the diving end of Ocean Systems was not getting the research benefits he had expected. Furthermore, the "navy boys" who ran the company were more interested in government contracts than oilfield work. When Dan went to London to investigate the rapidly expanding North Sea market, he was offered contracts by three oil companies, all of which he had to turn down. Frustrated, he came back and handed in his resignation. But Union Carbide refused to accept it; he had a five-year contract and they held him to it.

In the summer of 1969, Dan set up Sub Sea International in New Orleans with the Ocean Drilling and Exploration Company (ODECO). Unlike Ocean Systems, ODECO told to him hire his own engineers; the first two being Herb Newbury from Ocean Systems and Carl Helwig from the Westinghouse Underseas Division.

(Continued, Page 55).

In Memory
Reesce Discombe
1919 - June 2, 2007

It was with sadness that I received the news of Reece Discombe's passing though I only had one brief visit with him in 1995.

While in Port Vila, Republic of Vanuatu, I was given Reece's name as an "old New Zealand diver" and promptly contacted him by phone. Reece graciously invited me to visit his tropical bungalow home and we spent the afternoon over tales of post-World War II ship salvage which comprised the bulk of his diving career. Reece gave me a tour of his home and pointed out artifacts from the numerous wrecks he salvaged, brass plaques from engines and boilers of ships, and a coffee table made from a ship's wheel graced the living room.

Then he said, "I've only known one American diver. His name was Cross." Reece proceeded to describe his correspondence with E.R. Cross, then owner of the Sparling School of Deep Sea Diving, regarding a communications set Reece was looking for. They had never met but had corresponded by mail for several years. At one point, while discussing the comm box, he said, "I've still got the letters in my files, you can see them if you'd like."

I videotaped a brief greeting from Reece to Cross, and on my return home sent it to ER. In a later phone conversation, Cross told me, "I remember the letters, and I've still got them in a file if you'd like to see them." Reece and Cross seemed very much alike, friendly, generous, courteous, with a wealth of diving experience. Also, both were ham radio operators and eventually were able to make contact via radio. I consider myself privileged to have had the acquaintance of these two men.

(Reece was a member of the Vanuatu Amateur Radio Society and his call sign was YJ8DE. — Editor.)

Reece Discombe

Reece's name may not be familiar to most American divers, but in the Southwest Pacific he is legend. Due to the heavy presence of the UK and France in Vanuatu, he is well known to Australian and European divers through many dive magazine articles written about him and his exploits.

For those of us who missed the opportunity to get to know this rare gentleman, here is a snapshot of his career. Reece was born in Cambridge, NZ in 1919, and after completing his motor trade he went on to pursue degrees in mechanical and electrical engineering. He served in the New Zealand Army during World War II and then, in 1947, he formed a marine salvage company and moved to Port Vila, New Hebrides (now Republic of Vanuatu) where he built his career (and fame) salvaging sunken war material.

Off of Million Dollar Point, Reece pulled out and restored 14 bulldozers and hundreds of tires amongst other war surplus material intentionally tossed by departing Americans. He had been a 'hard hat' diver but was the first in the Southern Hemisphere to have acquired the new "Aqua-Lung." Among his many exploits was the discovery of, and salvage of items from, two French ships, *Boussole* and *Astrolabe*, which sank in the 1700s. On the very first day of exploration, Reece rediscovered the *Astrolabe* and during 1958 and 1959 many artifacts were recovered and may be seen at the Laperouse Museum at Botany Bay. His most famous ship wreck explorations, those of the S.S. *President Coolidge*, provided author Peter Stone with the research he needed to complete his in-depth book, *The Lady and the President — The Life and Loss of the S.S. President Coolidge*.

There are several other sides to Reece. In New Zealand, he set several records racing midget race cars in New Zealand and Australia. He developed engineering works in Vila, built a motel, developed and produced metal roofing and other industry but at the same time maintained an interest in the people, the culture and the history. He was respected as an expert on the history of white people's involvement in the islands. His interest in history led to becoming involved in the development of a museum and cultural center at Port Vila, on whose board he sat for some 30 years. The year after Vanuatu gained its independence in 1980, Reece and Jean became naturalized citizens. The expatriate Kiwi also held office as an Assessor for the Vila court for 20 years. Reece was highly regarded for his love of his adopted country.

One of his activities which I found quite remarkable was his continuing search for, and repatriation, of U. S. military war dead. The rugged terrain and jungles of islands of the Republic of Vanuatu still contain missing military aircraft and the remains of crew members. Following tips, hunches, and stories, Reece sought out the locations of these relics and was able to return the remains of several missing flyers to the U.S.A.

For his discovery of the French ships, Reece was awarded with French 'Order of Merit', which was personally presented to him by

Reece Discombe, continued from page 54.

General Charles De Galle, and for his service to the New Hebrides, Reece was awarded Britain's OBE (Order of the British Empire) in 1980. The United States also honored Reece and Jean who were able to accompany the remains of missing aircrew men to the U. S. on two occasions.

Reece Discombe was a bit of diving history unknown to the vast majority of the diving community, but a "character" reminiscent of storybook adventurers from the '40s and '50s. That was his era and he fit the mold. The world becomes a bit "less" each time we lose one such as he.

Sadly, Jean passed away a few years ago. Of their four daughters, two still live in Vanuatu, one in New Caledonia and another in NZ.

With best regards for Reece's family,
— Sid Macken

Reece's fellow countryman and college sums up his remarkable life admirably:

We extend our most sincere condolence to the family of the late Reece Discombe who has departed this life which he has lived to the full. His life has been a celebration of the two cultures — that of white man's way of life and that of the life of man Vanuatu. Reece will be long remembered as human museum of the Vanuatu's important history dating back to the time most of us living today were not around. His life spanned some of the most important and critical periods and events that have contributed to shaping the modern nation of Vanuatu, namely, the Second World War, the Colonial Period and the Transition to the Political Independence.

If knowledge of a country's history and respect for people and their culture is what makes a person 'a man ples', then the late Reece Discombe is truly the 'Man Ples' blong Vanuatu.

I had a privilege of working with him as one of the pillars of the Vanuatu Cultural Centre in the last government I served in between 1991 and 1995 as the Minister for Cultural Affairs, and through that memorable association, we worked together to build and to eventually celebrate the opening of our National Museum. In fact, Reece arranged to get the first visitor's book for the Museum. The Museum houses all that Reece and others like him have guarded and treasured — our way of life, our story, our vision and our values.

Thank you Reece for having been who you were to this country and its future'.

Sources: HDS historians Sid Macken and Keith Gordon with inserts from adventurer Greg Bond and various Vanuatu, English and French websites.

— Editor

Dan Wilson, continued from page 53.

Dan's central innovation of was the modular diving system. The chambers were vertical rather than horizontal to give the divers more headspace, and the entrance locks were designed as individual units which bolted together in various combinations. This made them easy to install — whether on a drilling rig, a construction barge or a supply boat — and suited them equally for bounce diving or saturation. All the controls for air-conditioning and machinery were housed in a separate unit fitted with quick-connect attachments. The entire system could be transported on three flatbed trucks, set up in a day and dived the next.

The first major contract came in the summer of 1971, when Sub Sea salvaged a 24-well production platform belonging to Shell. Toppled by Hurricane Camille in August 1969, in 330 feet of water, the platform was one of the largest structures in the Gulf of Mexico. The operation more than doubled the previous record for continuous saturation. It also validated Dan's decision to man Sub Sea with new young divers, nearly all them from the Marine Diving Technician Program at Santa Barbara City College.

In 1974-1975, Sub Sea International carried out the diving work for the installation of the four platforms for British Petroleum's North Sea Forties Field: at the time, the largest underwater construction project ever undertaken. This put Dan and Sub Sea firmly on the map in the North Sea and led him to conclude a deal under which BP bought 45% of Sub Sea.

In the United States, as a prominent member of the Association of Diving Contractors (ADC), Dan was closely involved in the successful effort to fend off union control of commercial diving. He subsequently became the chairman of the legislative committee, assuming overall responsibility in the battle to prevent the Occupational, Safety and Health Administration (OSHA) from subjecting commercial diving to what the ADC regarded as unrealistic and uninformed standards.

Dan retired from Sub Sea in 1977, not yet 50 years old. The company had 26 saturation systems, was turning in a 26% profit after U.S. and British taxes and had a drawer-full of contracts.

Dan then fulfilled a lifetime ambition of sailing around the world, which he and Dorothy accomplished in stages over a period of 13 years. Dan also made two single-handed crossings of the Atlantic; on his final voyage, with his Scotty dog and his cat for crew, he attempted to reach Southern Chile through the Pacific.

Dan is survived by his three children, Daniel J. Wilson, Sallie D. Wilson and Linda W. Damaré, six grandchildren and three great-grandchildren.

— Chris Swann

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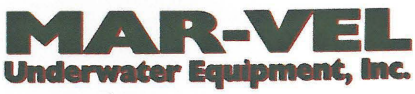

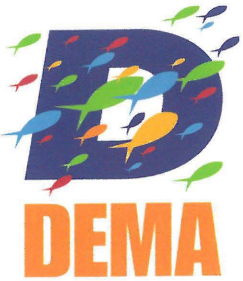

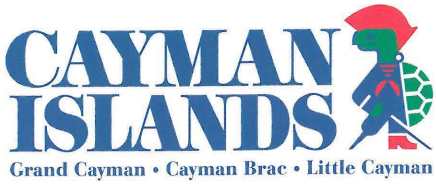

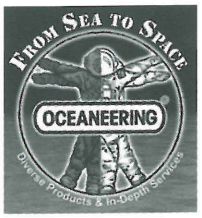

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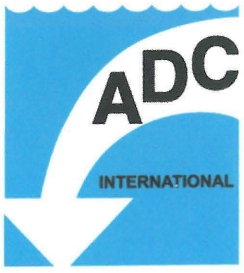

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